

The Children's Hospital Medical Center



The 1960 Annual Report

THE CHILDREN'S HOSPITAL MEDICAL CENTER, BOSTON

comprising:

The Children's Hospital

Infants' Hospital

The House of the Good Samaritan

Sarah Fuller Foundation for Little Deaf Children

Sharon Sanatorium

The Hospital and Convalescent Home for Children

Charitable Surgical Appliance Shop

and affiliates:

Children's Cancer Research Foundation, Inc.

Judge Baker Guidance Center

Children's Mission to Children

of the Children's Hospital Medical Center



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* Deceased



PRESIDENT'S MESSAGE

Large voluntary hospitals engaged in teaching and research as well as care of patients, such as The Children's Hospital Medical Center, present complex problems of administration. These problems appear to rise largely from two factors:

1. Such institutions operate not for profit but as a service to the community and to humanity in general; because the need for service is prone to outrun available capital and income, these hospitals are constantly in, or on the verge of, financial crises. Each improvement in the quality or quantity of service is made at the risk of an unbalanced budget and further deficit. The twin obligation to provide service to patients and their families, most of it at less than cost, and yet to balance the budget presents a paradox alien to the philosophy of the business man who finds the service he renders no substitute for a profit if he wishes to continue in business. We have touched here on the essential although not fully recognized difference between business and charity. As Mr. Greer indicates in the Director's Report, in a hospital *service is profit*, but it still remains to be underwritten by whoever can afford the dollar loss.

2. A voluntary hospital such as ours may present an anomaly of leadership and organization: dual management. This is to say it is legally governed by a lay board to whom the Director is presumed to be responsible for efficient operation of the hospital; yet the hospital's professional staff is legally autonomous and therefore to a great extent self-governing in its practice of medicine within the hospital. Successful management therefore depends not so much on the delegation of authority in a straight line of command from board to the staff as on a spirit of mutual respect and good will. It may come as something of a surprise to the uninitiated hospital trustee to find that the Director himself is not finally responsible to the board for operation of the hospital; rather, it is the professional staff which ultimately decides how they and therefore the hospital can best serve their patients. Consequently, in the operation of a large voluntary hospital, the Director must understand and try to implement the principles of sound business management and yet serve less as an executor of the board's will than

as an ambassador between the board and the professional staff, which has a well-defined will of its own.

It is in the image of a modern diplomat, who frequently must live with crisis, endeavoring to carry out the policy of his government through continuous representation and negotiation, that we might best think of the position of Director of The Children's Hospital Medical Center as we read the Director's Report, in the pages following. For my part, I find both vision and realism, the ideal and the practical, expressed here in the most challenging communication to come to the Board from the Hospital during my experience as Trustee and President. Here we find understanding not only of the changing needs of children and of The Children's Hospital, but pleasant news that our operating deficit has been reduced by one third in Mr. Greer's second year as Director. Here we find not only clear appreciation of the role of the Trustees and of the growing group of our friends in their support of the Hospital and the Medical Center, but we also get a frank request for an even greater effort on our part to strengthen the institution's mission as one of the greater educational and scientific arms of Harvard Medical School.

Perhaps we have not been able to extend these efforts and meet the future as rapidly and progressively as we might, but in 1960 we made some progress. And we have made this progress, as indicated above, in one of the most difficult of all areas: hospital administration.

In injecting this particular emphasis in the President's Message, I do not think anyone will assume that I have overlooked what is and always has been the secret of our success as a world center of pediatrics. The need of a child for good health is continuous from infancy through adolescence; as long as our doctors, nurses, social workers, technicians, and the many others among our 1,400 employees work to meet this need, the tremendous vitality, energy, and creativity of our institution will be self-renewing. Its objectives are clear and the means will be found.



TREASURER'S REPORT

The most gratifying feature of the year's financial transactions was the substantial decrease in the deficit. As shown in the comparative statement of income, the net loss of \$275,000 for the fiscal year ended September 30, 1960 was \$310,000 less than the 1959 deficit of \$585,000; both figures being exclusive of depreciation.

The improvement in operating results in 1960 compared to 1959 is chiefly due to the following increases in revenue:

| | |
|--|------------------|
| Patient revenue | \$379,000 |
| Income from investments | 86,000 |
| Allotments from our affiliated institutions | 75,000 |
| | <u>\$540,000</u> |

The increased revenue more than offsets the rise in operating costs of \$248,000. Although active steps were taken during the year to control costs through budgets, this increase was attributable to salary and wage increases granted during the year.

The favorable change in gross patient revenue is due to an increase both in rates and in use of Hospital services. Inpatient rates were raised \$1 per day effective January 1, 1960 and outpatient rates were raised \$1 per visit on April 4, 1960. The increase in the use of the Hospital is shown in the following comparative operating statistics:

| | Fiscal Year | |
|---------------------------|-------------|---------|
| | 1960 | 1959 |
| Admissions | 9,924 | 9,919 |
| Patient days | 93,024 | 91,399 |
| Average daily census | 254 | 250 |
| Outpatient visits | | |
| excluding psychiatry | 87,245 | 86,901 |
| Emergency visits included | 21,924 | 19,845 |
| Services: | | |
| Laboratory tests | 126,208 | 118,642 |
| X-rays | 78,248 | 74,453 |
| Operations | 5,616 | 5,492 |

On December 1, 1959, in accordance with Chapter 283 of the Acts of 1959, the following institutions: The Children's Hospital, The Children's Medical Center, Inc. and Charitable Surgical Appliance Shop merged into one body known as THE CHILDREN'S HOSPITAL MEDICAL CENTER. The statement of income shown on the following page reflects the operations for both fiscal years 1960 and 1959 of these institutions: The Children's Hospital, Infants' Hospital, Sharon Sanatorium, Hospital and Convalescent Home for Children, and Association of the House of the Good Samaritan.

F. Murray Forbes, Jr., *Treasurer*

THE CHILDREN'S HOSPITAL MEDICAL CENTER

Comparative Statement of Income for the Years Ended September 30, 1960 and 1959

| | 1960 | 1959 |
|--|-------------|-------------|
| During the year we earned from patient care | \$4,864,579 | \$4,485,153 |
| But the amounts not received because of allowances and patients' inability to pay were | 604,393 | 580,019 |
| Net revenue from services to patients | \$4,260,186 | \$3,905,134 |
| We received other operating revenue from: | | |
| Meals, rentals, services, School of Nursing | \$ 361,107 | \$ 300,947 |
| Overhead allowance on research grants | 100,528 | 77,425 |
| Outside grants for research and education | 1,706,701 | 2,168,336 |
| TOTAL OPERATING REVENUE | \$6,428,522 | \$6,030,265 |
| We spent or incurred expenditures for patient care: | | |
| Salaries, supplies and expenses from: | | |
| General funds | \$6,028,662 | \$5,740,817 |
| Outside grants for research and education | 1,706,701 | 1,746,759 |
| TOTAL COST OF OPERATING THE HOSPITAL | 7,735,363 | 7,487,576 |
| Since operating revenue did not equal operating costs, the resulting LOSS from operation of the Hospital was | \$1,306,841 | \$1,457,311 |
| This loss was partially defrayed by income received from these sources: | | |
| United Community Services allotment | \$ 31,257 | \$ 35,040 |
| Committee of the Permanent Charity Fund | 14,000 | 12,000 |
| Income from investments and trust funds | 715,611 | 629,258 |
| Allotments from affiliated institutions | 270,724 | 1,031,592 |
| Net LOSS before depreciation | \$ 275,249 | \$ 585,778 |
| Depreciation | 370,300 | 358,828 |
| Net LOSS for year ended September 30 charged against the General Fund | \$ 645,549 | \$ 944,606 |
| During the year we also received: | | |
| Legacies for general purposes | \$ 484,885 | \$ 906,608 |
| Gifts and legacies for restricted endowment | 138,261 | 323,964 |



" . . . the need for our chief products—
pediatricians, pediatric nurses, and pediatric
knowledge has increased . . . "



DIRECTOR'S REPORT

Changing Needs of Children

Children, it has been remarked, are not ordinarily aware of change. While, if granted good health, they grow physically and develop mentally day by day, the world around them appears to them constant, everlasting. But we who are adults and assume responsibility for children—their parents, guardians, teachers, physicians, nurses—are aware that the world as it affects children changes rapidly. An institution which would serve the world of children, as The Children's Hospital Medical Center does, has no choice but to change with it, or else fail in its mission.

Some of the dimensions of change are well-known. For example, the infant death rate—the number of babies who are born alive but die within the first year—has dropped more than 70 per cent since 1915. Beyond the first year, the risk of death likewise has greatly declined. The chance of a person surviving all the hazards of infancy, childhood, and adulthood and of reaching at least the age of 60 has increased from less than 50 per cent in 1900 to more than 75 per cent today. Even for those beyond 60, the outlook is much improved. The average expectancy at 60 is for 17.5 more years of life; at 75, for 8.7 more years.

The opportunity for longer, healthier, and more comfortable lives provided by the medical, agricultural, and industrial sciences has produced profound effects. We are aware of the "vitamin kids," the boys and girls who grow taller and larger than their parents. We have heard much of the aging of the population and more recently, partly in reflection of the somewhat higher birth rate of the last twenty years, of its "younging." The proportions both of children and of older persons to that part of the population in the productive, middle years have increased, implying that those of breadwinning and homemaking age—the parents of our patients—may be increasingly caught in an economic squeeze.

The nation has become concerned with the population "explosion" as it is called—a direct result of medical science's multiplying talents for keeping children alive. Within the lifetime of some of the Trustees of The Children's Hospital, the population of the United States has tripled. The total number of children has increased, the number of children per family has increased, and the proportion of children to total population has increased. Thus, the need for our chief products—pediatricians, pediatric nurses, and pediatric knowledge—has increased commensurately. Indeed, more than one of every three Americans, or about 70,000,000, is in the age range served by The Children's Hospital Medical Center—that is, 19 or under.

One blessing of the increased life expectancy is well known to our doctors and social workers who are in day to day contact with children and their parents, but is of interest to the public, and particularly those who engage in the planning and operation of community services. This is the "vanishing orphan." Forty years ago, 1.9 per cent of the nation's

child population had no mother or father; the figure is now 0.1 per cent—a 94.7 per cent decrease. In 1920, 16.3 per cent of children under 18 had lost either their mother or father through death; in 1958, the percentage was only 4.5. Thus it is that The Children's Hospital and the family of affiliated institutions making up its Medical Center must supply the staff and basic facilities for treating more and more children who come to us from an intact home and need spend only a brief time with us.

Another aspect of longer life is the emergence of new medical problems as older ones are solved. In 1900, the principal killers of children were pneumonia, tuberculosis, and gastrointestinal infections. These infections still persist, in reduced numbers, but no longer present a great threat to life, thanks to the antibiotics and other health-restoring measures. The child with pneumonia is commonly treated at home and recovers quickly. Likewise, some of the principal child cripplers of former times—tuberculosis of the bone and osteomyelitis, for example—have diminished in importance as the result of effective, early treatment. In 1960, the Hospital had one of its lightest years in the treatment of new cases of paralytic polio. This is not only a dramatic example of change but of the role of The Children's Hospital Medical Center in bringing change about, for it was here that the basic discovery of a method of cultivating polio virus was made; this break-through opened the way for the Salk vaccine. The wider use of the present or of improved vaccines will surely bring about the control of this dread disease and so eradicate a leading cause of orthopedic handicaps.

Today, different pediatric problems have come to the fore. Accidents, cancer, and congenital malformations are now the leading killers of children. Each of these disasters of children, particularly accidents and birth defects, are major cripplers as well as killers. As children are saved from infections and as the population grows, the number coming to the Hospital with some form of cancer or with a congenital disease increases.

In 1960, at a meeting of the American Public Health Association, Dr. Sidney Farber, Pathologist-in-Chief, reviewed developments in the chemotherapy and care of the cancer patient. Since he first introduced the antimetabolite drug, aminopterin, in the treatment of acute leukemia in children at this hospital in 1947, it has been possible to produce temporary (but as yet not permanent) recoveries. A few children have been kept alive from three to eight years after onset of their illness. Exciting progress also has been made here in the treatment of a cancer of the kidney with the antibiotic, Actinomycin D, in combination with small amounts of radiation. Children so treated are apparently normal and free of evidence of the tumor three years later, even though treatment was not undertaken until the disease had spread to their lungs.

Childhood cancer remains one of the most important frontiers in



"... different pediatric problems have come to the fore ..."



medical research; the program being carried out at The Children's Hospital Medical Center by an affiliated institution, the Children's Cancer Research Foundation, is commensurate to the size of the problem. We are the world center in the care and study of childhood cancer.

Studies have shown that 5 per cent of all infants born alive have major congenital malformations of some sort, the most common being defects of the heart or major blood vessels, urinary tract, and intestines. Many of these defects are completely correctable through techniques of surgery in which Dr. Robert E. Gross, Surgeon-in-Chief, has pioneered at The Children's Hospital; in still other cases, disability can be greatly reduced. As Dr. Gross notes in his annual report, 1,818 operations for corrections of malformations were performed in the Department of Surgery alone during 1960. A large number of these operations, particularly those involving the open heart, could not have been attempted a decade ago. Now the child may undergo heart surgery and be back home in two weeks. Still other congenital defects present problems for solution by the orthopedic surgeon, the neurosurgeon, the neurologist, or others.

Anyone familiar with the long and varied record of original scientific contributions emanating from The Children's Hospital and its affiliated institutions will recognize that we have hastened change. This change affects the Hospital itself as much as it affects children. One further example will suffice for the moment: The Children's Hospital began ninety-one years ago principally as a service to physically crippled children who occupied beds, often for long periods of time. Orthopedics, the specialized treatment of bone and joint diseases, was first developed here as a recognized specialty and, throughout its history, the Hospital has been a world leader in this field. Thanks to improvements in methods and systems of treatment and rehabilitation, however, a large number of orthopedic patients require relatively short periods of hospitalization and then can be treated in our orthopedic out-patient clinic and sent home after each visit. Still others require no hospitalization at all. In this way, our doctors can care for more patients and at a lower cost to parents.

The same situation applies in other departments. For instance, Dr. George E. Gardner, Psychiatrist-in-Chief, in his annual report, provides us with a comprehensive description of the development of psychiatric out-patient services at the Hospital matching in-patient services available at the Judge Baker Guidance Center. Other clinics are too numerous to mention in this brief discussion but include fields of easily recognized importance—cerebral palsy, cystic fibrosis, epilepsy, speech and hearing defects, allergies, to cite a few. As a consequence of these developments, we have witnessed the phenomenon in the last ten years of a medical center which was primarily an in-patient hospital, convalescent home, and, in some instances, school for chronically ill children, becoming predominantly a complex of specialized clinics—forty-one all told. Tabulation of 20,513 individual patients coming to the Hospital during the

"... a medical center which was predominantly an in-patient hospital is becoming a complex of specialized outpatient clinics ..."

fiscal year* ending September 30, 1960, showed that 10,871, or 53 per cent, were clinic patients and 9,642, or 47 per cent, were bed patients.

Plainly, as we shall further elaborate, the advances that the Hospital, its staff, and its affiliates have scored through scientific research, through the training of child specialists, and through direct services to children have only served to broaden and deepen our responsibilities in a changing world. One is apt to think of an old hospital as having a Gibraltar-like fixity—as an established, material, and persistent element in the life of its community. Actually, The Children's has this kind of stability only in the continuity of its mission of service to children. Otherwise, it is the embodiment of the changing needs of children. It must remain so, and indeed must move more rapidly in meeting change than it has heretofore, if it is to continue to fulfill its mission. In summation, we feel that the words used by Dr. George P. Berry, Dean of the Harvard Medical School, exactly fit our own situation: "... No institution can afford to live off the capital of tradition. None know better than those who labor here that history is a bank account which must be constantly renewed. ..."

Dimensions of Service

The Children's Hospital Medical Center serves the world of children in many directions and a variety of dimensions.

The most obvious dimension is the *direct care* of children. Whereas we are sometimes known as The Children's Hospital of Boston, the accompanying chart showing the sources of our patients demonstrates the extent to which we are a community, state, national, and world institution. We serve children everywhere, and many more from outside Boston than from within it. Last year, 13,701 of our 20,514 hospital and clinic patients came from outside of Boston, 11,381 from elsewhere in Massachusetts, 2,190 from elsewhere in the United States (many from neighboring New England states), and 130 from elsewhere in the world. For the most part, those coming from abroad present complicated problems of diagnosis and treatment, either due to the rarity of their disease, the obscurity of signs and symptoms, or the lack of generally effective knowledge of how to proceed. By no means all these children have a hopeful outlook, but, as Dr. Charles A. Janeway, Physician-in-Chief, observes in his annual report, our Hospital becomes the court of last resort. The general assumption is that our pediatric scientists, working at the growing edge of knowledge, may find a solution where others cannot. At the same time, we render some types of service that are largely local or regional in nature; our emergency clinic continued to grow last year, as it has for the last decade, as a first line of defense against accident injuries and other acute conditions.



"... for patients from all over the world ..."



"... our pediatric scientists may find a solution ..."

*CHMC recognizes two different years—an academic year ending June 30, a hospital accounting year ending September 30.

SOURCE OF CHILDREN'S HOSPITAL PATIENTS BY PLACE OF RESIDENCE

For the Year Ending September 30, 1960

MASSACHUSETTS

18,194



Boston

6,813

ELSEWHERE IN MASSACHUSETTS:

11,381



| | | | |
|-------------------|-------|------------------|-------|
| Barnstable County | 129 | Hampshire County | 65 |
| Berkshire County | 101 | Middlesex County | 4,581 |
| Bristol County | 597 | Nantucket County | 24 |
| Dukes County | 4 | Norfolk County | 2,045 |
| Essex County | 1,290 | Plymouth County | 651 |
| Franklin County | 59 | Suffolk County | 634 |
| Hampden County | 643 | Worcester County | 558 |

ELSEWHERE IN THE UNITED STATES:

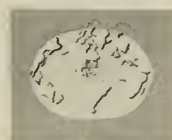
2,190



| | | | |
|----------------------|-----|----------------|-----|
| Alabama | 9 | Missouri | 3 |
| Alaska | 2 | Montana | 4 |
| Arizona | 3 | Nebraska | 4 |
| Arkansas | 3 | New Hampshire | 431 |
| California | 16 | New Jersey | 52 |
| Colorado | 1 | New York | 214 |
| Connecticut | 367 | North Carolina | 8 |
| District of Columbia | 9 | Ohio | 15 |
| Florida | 51 | Oklahoma | 1 |
| Georgia | 11 | Pennsylvania | 19 |
| Idaho | 1 | Puerto Rico | 1 |
| Illinois | 9 | Rhode Island | 412 |
| Indiana | 3 | South Carolina | 9 |
| Iowa | 8 | Tennessee | 3 |
| Kansas | 2 | Texas | 6 |
| Kentucky | 6 | Vermont | 83 |
| Louisiana | 2 | Virginia | 15 |
| Maine | 359 | Washington | 2 |
| Maryland | 13 | West Virginia | 4 |
| Michigan | 15 | Wisconsin | 5 |
| Minnesota | 8 | Wyoming | 1 |

ELSEWHERE IN THE WORLD:

130



| | | | |
|-----------------|----|---------------|----|
| Africa | 2 | Europe | 25 |
| Asia | 3 | Mexico | 15 |
| Canada | 40 | South America | 31 |
| Central America | 7 | West Indies | 7 |

GRAND TOTAL

20,514

A second dimension of service, also obvious, is that of a *training center*, as part of Harvard Medical School. Dr. Edward B. D. Neuhauser, Radiologist-in-Chief, points out in his annual report that, when the Society of Pediatric Radiology was formed last year, two thirds of the charter members were found to have obtained their resident training in pediatric radiology at The Children's Hospital. The program of Dr. William T. Green, Orthopedic Surgeon-in-Chief, for the resident training of orthopedic surgeons is one of the most, if not the most, sought-after in the country; many of the professors of orthopedics in other medical centers have been trained here. Dr. Gardner heads one of the world's largest centers for the training of child psychiatrists, a specialty in which the nation is in extremely short supply. The Department of Medicine, under Dr. Janeway, conducts the largest teaching program in the C. H. M. C. and, as it pertains to pediatricians, one of the largest in the world. These examples could be extended to include other specialties and other professions than medicine. At all times, we have, in addition to the regular professional staff, more than 200 doctors and nearly 200 student nurses in training in The Children's Hospital. A substantial proportion of the doctors come from abroad.

Our educational responsibilities recently have extended into hospital administration. In June, Mr. Aslam Gundas, administrator of the Children's Hospital in Ankara, Turkey, came here under the sponsorship of the Rockefeller Foundation for a one-year tour as administrative resident, following a year at the University of Chicago Clinics.

A third and likewise obvious dimension of service is *scientific research*. It is not possible to detail here the long list of scientific "firsts" that have occurred in The Children's Hospital Medical Center. They range from the several Gross heart and blood vessel operations and the several brain operations developed by Dr. Franc D. Ingraham, Neurosurgeon-in-Chief, to basic knowledge of blood and neurological diseases and bone growth worked out by others, among them Dr. Louis K. Diamond, the late Dr. Bronson Crothers, and Dr. Green. The "iron lung" was developed here; so was the life-saving blood replacement transfusion for "Rh babies." Our firsts include the Nobel Prize-winning work of Dr. John Enders' Laboratory; Enders and his associates not only were first to cultivate polio virus in non-nervous tissue, making a polio vaccine possible, but more recently have attenuated the measles virus and developed a measles vaccine now undergoing clinical trials.

The Children's Hospital Medical Center research and educational programs receive \$1,700,000 a year in outside grants, exclusive of the programs operated independently by the Children's Cancer Research Foundation and the Judge Baker Guidance Center. Inclusion of the latter's research programs would bring the total to more than \$3,000,000.

Other dimensions of service are not so well recognized or so well financed but are no less valuable to humanity. There are, for example,



"... A training center ..."

"... A long list of firsts in scientific research ..."



"... heart and blood vessel operations ..."



"... the basic knowledge of bone growth ..."



"... the lifesaving blood replacement for Rh babies ..."

what we haven chosen from the administrative viewpoint, to call the *unseen, or silent, services*; they are, at any rate, wholly voluntary and largely unsupported from outside sources. Perhaps the best example is the free consultations that our staff of 250 physicians give, as a matter of custom and a function of leadership. Daily, every department receives requests by letter or telephone from doctors all over the world for an expert opinion on diagnosis or treatment of difficult cases.

One might visualize the busy professor of pediatrics as constantly moving from one child to another in a crowded clinic, or making ward rounds in the hospital, but the many visitors to the office of Dr. Janeway are struck by the fact that one of his chief functions is as an answering service. There are the many interruptions as he takes long-distance calls—perhaps to help a parent find a good pediatrician in Madras, Cairo, or Dallas. In his annual report, he points out how many members of his staff make contributions in the public interest as trustees, chairmen, or committee members of various charitable organizations of local or national scope. "This is no ivory tower," Dr. Janeway remarks, "but an institution whose members are deeply involved both as experts and good citizens in the life of this country."

Dr. Gross devotes several weeks a year to evaluating candidates for certification as specialists and for surgical society membership. He gives free consultation by mail, spending from twenty to thirty hours a month on from sixty to eighty case histories referred to him from various parts of the world. Dr. Farber's department receives some ten telephone calls a day for free consultation on questions of pathology. Dr. Neuhauser, who gave twenty-two lectures on radiology at meetings outside of Boston in 1960, receives X-ray films by mail with requests for his expert opinion; he estimates that he gives about 100 such free consultations a year. Dr. Gardner estimates that he spends 30 per cent of his time answering questions by letter, telephone, or personal interview. These mainly involve helping parents find psychiatric treatment for their children in this country or abroad and advising students where to seek psychiatric training. Much of this free consultative work is carried on evenings, holidays, and weekends, in addition to his responsibilities as a clinician, teachers, researcher, editor, and administrator. Dr. Green, who shares with other Chiefs the energy and motivation to work almost continuously, is in great demand as an educator in orthopedics; last year, despite three weeks as a hospital patient himself, he was lecturer or moderator at twenty-eight meetings in nine states, not counting five lectures during a two-week trip to Brazil. Our doctors travel throughout the world, to give courses in Scotland, to make investigations in Africa, to survey Russian progress in infant care, to speak at an international meeting in Japan, and so on. They are in addition editors of a large number of professional journals.



" . . . An institution whose members are deeply involved both as experts and good citizens in the life of this country . . . "

Several of the staff serve as advisers or consultants to various agencies

of the Federal Government, among them Dr. Ingraham, Dr. Gardner, and Dr. Janeway, as well as others. For example, Dr. Farber is a member of the National Advisory Health Council, and served on the Jones Committee, which made recommendations for a Federal medical research program emphasizing long-term support of medical scientists and research centers throughout the country. This program has been to a great extent enacted. But we are tempted to digress here to point out that, while scientific discoveries are a major source of the fame of The Children's Hospital and therefore research support is of prime importance, the increased availability of monies for research enlarges, rather than reduces, the Hospital's need for capital funds, which will be mentioned later. In addition, the Hospital is represented in the leadership of most, if not all, of the major national voluntary health organizations—for example, by Dr. Gross, in heart; Dr. William Berenberg, in cerebral palsy; and Dr. Harry Shwachman, in cystic fibrosis.

We have provided no more than fragmentary sampling of the unseen services, or outside activities, of our staff. Yet the examples given should be enough to illustrate what demands the public, medicine, and science make upon the Hospital because of its reputation as a national and international resource in child health. We can applaud the civic participation and professional leadership of our staff, take great pride in their capacity to accelerate progress in science and education, and take full cognizance of the spiritual satisfactions to be derived from such contributions; yet we remain aware that outside demands on staff time are a tax on the primary service function of the Hospital. In this special sense, we are not a tax-exempt corporation, any more than we are a self-sufficient enterprise that can live and flourish solely through its own efforts. Indeed, for our economic survival, we are dependent on legacies and large gifts representing both the last testaments and living testimonials of the Hospital's many good friends—expressions of their faith in the soundness of its mission and the certainty that its service in the future will equal or surpass that in the past.

The responsibilities which leadership in the pediatric sciences impose on our senior staff, not only in their personal contributions and services to children and in their own activities as teachers and scientific investigators, but equally so in their service on advisory boards and committees of governmental and voluntary agencies, have increased to the highest point in the history of the Hospital. This increase, bringing even the most gifted and energetic man to the threshold of fatigue, beyond which he cannot function efficiently, emphasizes the need for strengthening our medical staff in many quarters. The solution, the many discussions of the Staff's Planning Committee have indicated, appears to lie in more adequate staffing and financial support in depth—double-staffing of senior men in full-time positions—plus increased space to accommodate



" . . . much of this free consultative work is carried on evenings, holidays and weekends . . . "



" . . . almost continuously in demand as an educator in orthopedics . . . "



" . . . A bold new program emphasizing long-term support of medical scientists and research centers . . . "

additional staff and some changes in concepts of hospital and departmental management to achieve more effective delegation of authority. But such a solution would require a greater availability of assured income for creating and maintaining permanent staff positions—positions infinitely preferable from both the scholar-physician's and hospital's viewpoint. We are reminded of the axiom in business management that the first task of a new president of a corporation is to choose his successor. This would be easy enough to do at The Children's Hospital, some of our Chiefs of Staff have remarked, *if we had the money*. In contrast, many of our senior men have been obliged to raise themselves and their departments by their professional bootstraps, depending on private practice not only to support themselves but some part of their teaching and research programs.

At present, we have not a single professorship that is adequately endowed; the chairs held by Drs. Janeway and Gross are supported only on a partial basis and therefore require considerable strengthening. In addition to these, we could use ten fully endowed faculty positions, including both full and associate professorships with the doctor's basic income provided at no cost to the Hospital. The medical staff presently receives some funds from the Medical School, but our teaching program is not as strongly supported as it should be in any department.

The creation of endowed professorships provides a method by which teaching can pay its own way, and enable the donor to invest in a position that will perpetually strengthen the Hospital in its services to patients. In 1960, we were fortunate in being able to take one step toward augmenting our senior staff. We received from a donor who wishes to remain anonymous securities valued at \$450,000. After careful consideration by the Planning Committee of the Staff in consultation with the donor and the Trustees, the decision was to ask the Medical Faculty of Harvard to establish a chair in child neurology at The Children's Hospital as a focus for a new program of neurological research, constituting an attack on some of the major causes of crippling and death in children, including hereditary afflictions and the accidental defects of gestation and birth. This will constitute a contribution to the Harvard Medical Center's program to strengthen the medical faculty.

In this connection, it is of interest to note the scheme devised by the School's Office of Development to enable smaller foundations and voluntary agencies to create professorships, that is to make a tangible investment in people on a pay-as-you-go basis. The proposal is simply that the donor commit himself to give the Harvard Medical Center \$60,000 a year for ten years; of this amount \$25,000 is used currently during this period to pay the professor's salary, and Harvard University invests the remaining \$35,000 at 5 per cent; at the end of ten years, the professorship becomes fully endowed and meanwhile the incumbent has pursued an active career of research, teaching, and service. In a manner

of speaking, this is a way of having one's philanthropic cake and eating it, too. An additional attraction from the giver's standpoint is that the scholar-physician holding a \$25,000-a-year professorship can attract Federal and voluntary research grants in the range of \$250,000 to \$500,000. In this way, the original endowment becomes a prime mover in a full-scale program in a given field.

Planning for the Unpredictable

Our Medical Center is a general hospital for children. The business of a general hospital that serves its community is threefold: It is to meet human crises as they occur, to provide continuous care of the sick as they need it, and to engage in a broad program of disease prevention and health promotion. That it will need to do these things and do them well is wholly predictable. We must be prepared to meet all emergencies as they occur, and yet we do not know what the emergency will be until it arrives. We must be prepared to apply the latest scientific advances in disease prevention or treatment, but we do not know what they will be until they are discovered.

We find a ready example in poliomyelitis. The Massachusetts polio epidemic of 1955, which threw a great burden on our facilities as a state and regional center for the treatment of infantile paralysis, was unpredictable. The laboratory break-through that made the polio vaccine and the ultimate control of the disease possible also was unpredictable in time of discovery. An epidemic may fill a hospital's wards: a vaccine or the mere absence of epidemics may in time empty them.

The same situation may be observed in heart surgery. It has been estimated that a quarter million children have congenital heart defects cheating them of a robust childhood or of life itself. Only a few of these defects could be repaired prior to open-heart surgery. Dr. Gross has pointed out that the development of open-heart surgery did not begin until a surgeon at the University of Minnesota chanced to read in a British medical journal of some successful experiments in the cross-circulation of blood in dogs, a sort of continuous transfusion in which the heart of one would do the work for two. The first open-heart surgery in humans was done in this way, with a parent's circulation being linked to his child's. Heart surgeons realized what could be accomplished by using standby heart and lungs while the patient's heart was stopped. Efforts to perfect a heart-lung machine, pioneered at Jefferson Medical College, were redoubled, here and elsewhere, with rapid success. Today, surgery on the open heart, while complex and requiring great skill and teamwork, is a commonplace at this Hospital. Operations can be carried out on 75 per cent of all malformations of the heart and major blood vessels observed in children over one year of age. In his annual report, Dr. Gross points out the effect on the surgical caseload in this Hospital. We witness quickly rising curves in the numbers of new types of operations, followed by drop-offs. What happens, he observes, is that when



"... An epidemic may fill a hospital's wards; a vaccine may in time empty them ..."



"... We must be prepared to apply the latest scientific advances but we don't know what they will be until they are discovered ..."

a surgical technique is originated or developed at The Children's Hospital it attracts patients for a time but, when the technique is adopted by surgeons in general hospitals elsewhere, our patient load in this direction drops off.

This is how medical science progresses. The cost of progress, in economic terms, can be read not only in the rise and fall of patient revenues from different services but the Director's seeming obsession with an unpleasant topic: money. In 1960, the Hospital admitted 9,924 patients for bed care, about the same as 1959 (9,919) but these patients stayed a little longer on the average, 9.3 versus 9.2 days (including convalescent patients). With a bed capacity of 354, the average daily in-patient census was 254 (71.8 per cent) against 250 (70.7 per cent) the year before. It is impossible to operate any hospital at 100 per cent of capacity, but a 10 per cent increase—to 80 per cent or so—would have completely wiped out our 1960 operating deficit of \$275,250 and left a substantial sum for other purposes, such as the payment of house officers' salaries or the improvement and expansion of clinic and research facilities.



" . . . when a new surgical technique is developed at Children's Hospital . . . "

Miss Muriel B. Vesey, in her annual report as Director of the Nursing Service, deals with another element of unpredictability in hospital operation: personnel turnover. We have a regrettably high rate of turnover in our nursing staff. Many nurses are prone to leave in the early part of the summer. This is the time when our in-patient census rises to its highest peak, due to the fact that parents bring in their children for elective surgery at the close of the school term (we tend to reach an annual high in June and annual lows in September and December). Asks Miss Vesey: "Does one attempt to staff for the peak or try to strike an average?" Neither approach is wholly satisfactory. While the turnover is most serious in nursing (children require more nursing than adults), the problem is not confined to nursing. Mr. Alexander Brown, Personnel Director, points out in his annual report that 600 employees left C. H. M. C. in 1960; this is close to a 50 per cent rate of turnover. This phenomenon is not uncommon among hospitals—due in part to their low salary scale, insufficient staffing, and inequitable work loads—but it is costly, both in the dollars-and-cents expenses of hiring and training and in operating efficiency. Through study and revision of personnel policies, the Administration is endeavoring to improve the situation. Wage and salary increases in the last year totaled \$175,000. We may expect a continued upward trend in payroll.

A moment ago, we mentioned the house officer salary and working space problems. We did so deliberately, although not without misgivings for they both have become sensitive areas in this Hospital.

The Children's Hospital Medical Center is, insofar as we know, the last teaching hospital in the country without a salary program for the support of interns and residents—the house staff. At one time it was

an occasion for pride to state that the opportunity for training at The Children's Hospital was so attractive to the medical graduates of the nation they would come without pay. Today, the climate of opinion regarding the sacrifice has changed. We fully agree that a teaching hospital should pay its house officers at least a modest stipend, over and above the traditional board, room, and laundry. Many are married; some have children; many have already incurred debts for their medical schooling. In addition, lesser hospitals offer fairly attractive sums in order to attract house officers.

In 1960, impetus for payment of house officers arose with the Trustees' establishment of the John Wells Farley Memorial Fund, in honor of the late Chairman of the Children's Medical Center Board of Trustees. The proposal was to raise money for an endowment, the income of which would be used as the nucleus of a house officer salary program. To lead the way, Mike Farley's friends raised more than \$100,000 in his memory. It was recognized that endowment for a total program would fall in the neighborhood of \$5,000,000 and therefore it probably would be necessary to find the resources in ways other than endowment alone.

As the year ended, a survey by the Office of Development showed that of 106 house officers logically entitled to compensation for their services to the Hospital, 61 received annual amounts varying from \$1,000 to \$7000 and 45 received nothing. The breakdown by departments is instructive:

| | PAID | NOT PAID | TOTAL | | PAID | NOT PAID | TOTAL |
|--------------|------|----------|-------|--------------|------|----------|-------|
| Medicine | 9 | 29 | 38 | Radiology | 4 | 0 | 4 |
| Surgery | 12 | 0 | 12 | Orthopedics | 6 | 10 | 16 |
| Anesthesia | 9 | 0 | 9 | Psychiatry | 11 | 0 | 11 |
| Neurosurgery | 3 | 0 | 3 | Dentistry | 2 | 0 | 2 |
| Pathology | 5 | 6 | 11 | GRAND TOTALS | 61 | 45 | 106 |

It is obvious that those least apt, or able, to pay their interns and residents are Medicine, Pathology, and Orthopedics. The survey found that the Hospital currently paid \$43,392 a year in house officer salaries, whereas \$118,514 was paid from other funds (of a temporary or special nature). Under the salary scale contemplated, it appears that a house officers' salary budget would total approximately \$275,000 a year.

Consideration of the solution by the Board of Trustees was pending as the year closed.

The second topic of interest here is the problem of space—not outer but inner space, specifically floor space. There is a growing—indeed, now crying—need for expanded facilities for clinics and for research. These are two needs, really; they are equally pressing, and will become



" . . . In 1960, impetus for payment of house officers arose with the establishment of the John Wells Farley Memorial Fund . . . "

more so within the next year or two. The Cardiology Division under Dr. Alexander Nadas, which supplies the diagnostic foundation for heart surgery, cannot expand, and indeed is blocked from obtaining a large Federal grant for operation of a cardiology research center by lack of space. The anticipated appointment of a professor of child neurology, as mentioned earlier, will compound the problem. He will need a laboratory and offices for himself and his staff. Large grants for neurochemical and neurophysiological research are obtainable from both public and voluntary sources, such as the National Institute of Neurological Diseases and Blindness and the National Foundation. They depend in this case on bricks and mortar.



" . . . better physical arrangements for our ambulatory services . . . "

Many other examples of a space bind could be cited, but the most critical one administratively is in facilities for the diagnosis and treatment of out-patients. Our forty-one clinics are presently scattered, making for uneconomical operation from a bookkeeping and transaction standpoint; they are tucked around, wherever a room or two could be found. Our main Out-Patient Department in the old Hospital (Building A) is converted in-patient facilities. Many different departmental services have been crowded into this space; anyone who has visited our "OPD," as we term it, would agree that it was not in keeping from the standpoint of utility or comfort with our newer facilities, even though some small improvements have been undertaken. Among other things, we lack comfortable waiting rooms for the parents, usually mothers but sometimes fathers and occasionally mothers *and* fathers who crowd the few benches and chairs with their children, often not only with the patient himself but other members of the family as well. It has been most difficult to maintain a spirit of sympathetic understanding and good public relations under such circumstances. There have been complaints. Where a sick child is involved, parental emotions are involved. Some criticisms have been well founded.

Dr. Janeway's annual report clearly depicts the source of our embarrassment. The Medical Department has witnessed a 72 per cent growth in its out-patient load in the last fourteen years, in contrast to a 32 per cent decrease in acute in-patient admissions and a 42 per cent decrease in days in the hospital. The decreases in admissions of and hospital stay of chronically ill children have been even greater. Yet the most recent construction, itself sorely needed at the time it was completed in 1954, was primarily for in-patient facilities.

It was chiefly to provide funds for a new clinic and research building, linking the present old and new Hospital buildings, that our present limited annual fund-raising campaign—the December Appeal—was begun six years ago. Some \$2.3 million now has been raised, exclusive of a promise of \$700,000 from the Federal government. Approximately \$500,000 was added in 1960. Original plans for the building have become obsolete, however, and the first estimate of the cost of this small

building—\$4,000,000—is subject to upward revision.

Beginning of construction has been delayed in the face of the fact that, as Mr. Wolbach pointed out, a new building would increase Hospital operating costs at a time when the annual deficit threatened to reach \$1 million. This is a dubious distinction that the Director hopes never to achieve. Decision to go ahead on the Clinic and Research building more recently has been delayed pending clarification of (1) the objectives of the Harvard Medical Center and its \$58,000,000 Program for Harvard Medicine and (2) discussions of a new combined hospital building, or hospital complex, furnishing combined facilities for several of the teaching hospitals adjacent to the Medical School. Whereas The Children's Hospital Medical Center fully believes in and is committed to pursue its own destiny, as a separate institution, it for many years has worked cooperatively with other Harvard teaching hospitals and would be willing to extend areas of joint activity where integration of efforts would improve service to patients and effect economies or improve efficiency.

As a result of information furnished to the Trustees and Chiefs of Staff by Dean Berry and members of his staff, it is now clear that the area in which the Hospital and School can most effectively cooperate is in the raising of funds (1) for the endowment of professors working in the Hospital and (2) for strengthening departmental staffs associated with these professors. This effort in fact is the sole purpose of the Program for Harvard Medicine (beyond endowment of a new Medical Library, already accomplished). Dr. Berry has made it clear that brick-and-mortar problems rest with the hospitals, and that they should proceed in construction and its financing in any way they see fit.

It is now possible to perceive the advent of a combined hospital building as a long-range goal of the Peter Bent Brigham and other interested hospitals, something which will consume some years in its realization; hence it is easy to recognize that this objective offers no solution for our own space problem. The need for a Clinic and Research Building is so short in range it would seem to be point blank. We need such a construction, costing perhaps as much as \$6 to \$7 million, immediately. It remains to be determined what it will contain and how it will be fully financed. But these decisions should be reached in 1961.

This brief discussion of the many variables that affect sound planning and development for the future documents our earlier point that the needs of children change and therefore the needs of a children's hospital change. This much is predictable. But that, we may sum up, is about all that is predictable. Exactly what changes will occur and what the future will hold is a question that continually perplexes the governing officers, the administrative staff, and the medical staff of the Hospital. One other thing is wholly predictable, by the way—the cost of operations will continue to rise.

" . . . brick and mortar problems rest with the hospitals . . . "





" . . . the greatest source of higher costs is our investment in highly skilled personnel . . . "

Costs: Every Hospital's Headache

During 1960, the administration completed its installation of a new accounting system aimed at accurate determination of the cost of patient care, of teaching, and of research. On the basis of this system, known as responsibility accounting, we began developing departmental budgets that, when in full operation, will enable the Hospital to present the Trustees with a complete analysis of accurately identified costs of operation, making it possible to eliminate unnecessary expenses and properly allocate financial responsibility for necessary expenses.

The American Hospital Association has estimated that the costs of operating hospitals have risen 50 per cent in the last ten years, and will rise as much again in the next ten. We estimate that our costs rose 60 per cent in the last decade, and will go up 60 to 70 per cent in the next ten years. The greatest source of higher costs is salaries, which make up 70 per cent of the ordinary hospital's budget; in the first-class care of children, the pediatric hospital often finds its personnel costs exceeding that percentage, since the ratio of employees per patient must be higher; in fact, with a payroll of 1,400 employees, the Children's Hospital ratio of employees to patients is more than twice as high as the average general hospital. Where the national average hospital cost per patient per day was \$31 (1959), our cost in 1960 was \$45; board and room amounted to \$30 and diagnostic and therapeutic service charges to \$15 a day.

As the Treasurer's Report shows, The Children's Hospital Medical Center was able to increase its gross patient revenue \$306,000 in 1960 despite a \$175,000 jump in operating costs (wage and salary increases), largely by increasing in-patient rates from \$26 to \$27 a day and out-patient fees from \$3 to \$4 per visit and meanwhile rendering a slightly greater amount of patient services than the year before.

Since the total annual deficit charged against the general fund was reduced approximately \$300,000 by this experience (plus a somewhat larger return on investments and increased allotments from affiliated institutions), one might well ask why not raise the rates to a point where we could make ends meet. We may feel forced to recommend another small increase in the coming year in order to improve our operating position and to reduce the destruction of capital—the invaluable "hard money" that all medical institutions these days find so *hard to come by*.

As the result of improved administrative statistics, however, we can provide one good reason why we should try to avoid further rate increases as long as possible and preferably find increased resources elsewhere.

In 1958, the Department of Commerce informs us, the average American family had an income of \$6220. Analysis of data obtained in admission interviews by the Comptroller's Office revealed that 68 per cent of the families of our in-patients and 75 per cent of the families of our out-patients earned less than this national average. Where only one out of three American families fall in the \$2000-\$6000 salary class, two

out of three of the families of Children's Hospital patients fall in this class. The ratio is three out of four in the case of out-patients' families. The median range of family income for in-patients is \$4940-\$5200 and, for out-patients, \$4420-\$4680.

Fifty per cent of our in-patients are covered by some form of Blue Cross prepaid hospitalization, the most popular plan being one that pays \$15 a day against our \$27 charge for board and room and pays \$15.97 a day for ancillary services, leaving the parents with \$12 a day to be paid out of pocket, or the Hospital in the position of subsidizing about \$14 of the \$45-a-day cost of operation.

Beyond the 50 per cent who have Blue Cross, 20 per cent have other forms of hospital insurance, 18 per cent are welfare cases paid at agreed rates much less than cost, and 12 per cent receive free care.

Blue Cross or Blue Shield provide only a minimum of coverage for out-patients, the benefits usually applying only in emergency cases or the treatment of fractures.

From these remarks, it may seem that The Children's Hospital Medical Center, despite what appear to many to be high rates, serves a preponderantly lower middle-class economic group at revenue-producing levels considerable below cost. Indeed, with an operating revenue of \$6,355,699 in 1960, the level was \$1,306,843 below cost. As offsets, we received a total of \$31,257 from the United Community Services and \$14,000 from the Committee on the Permanent Charity Fund. Considering that we are a private hospital receiving no public tax support, it may be concluded that the Hospital is rendering a truly charitable, philanthropic, and humanitarian service to its community.

That we are able to do so, by providing an immediate service to more than 20,000 children and immeasurable services to the children of the nation and the world who benefit from knowledge developed or imparted in our institution, is a tribute to the generosity of our Trustees and our friends, more than 14,000 of whom made gifts to the Hospital in 1960. It is simultaneously a tribute, it goes almost without saying, to our doctors, nurses, social workers, technicians, volunteers, and many other employees who have upheld the tradition that we take care of children, as they come, and only secondarily concern ourselves with the cost of this care. It is the responsibility of the Director to accept this secondary concern, but he would be a foolish hospital administrator indeed if he did not make it explicitly clear that he feels that he pursues sound practices of leadership and management in order to assure the continuity of the primary mission. Putting it another way, he too recognizes that a children's hospital measures its profits not in dollars but in children served.

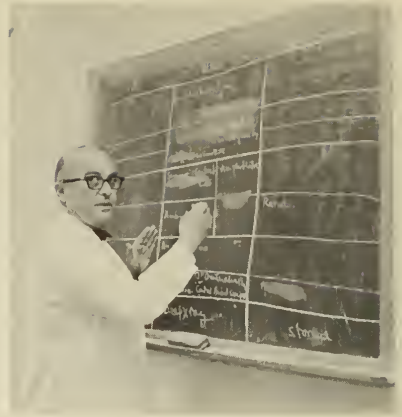
JOSEPH P. GREER, *Director*





" . . . a children's hospital measures its profits not in dollars but in children served . . . "





" . . . The plan that created The Children's Medical Center called for the gathering together, within one organization, of all aspects of Medicine, Surgery and the Laboratory Sciences that concern themselves with the normal and the sick infant, child and adolescent . . . "



PLANNING COMMITTEE'S REPORT

The seven Chiefs of Staff of The Children's Hospital Medical Center make up the Planning Committee, which in one form or another reflects a continuity of planning and development going back to 1931. In that year, Drs. Kenneth Blackfan, William Ladd, Frank Ober, S. Burt Wolbach, and the present Chairman constituted the Committee. The present members are Drs. Robert E. Gross, Charles A. Janeway, William T. Green, George E. Gardner, Edward D. B. Neuhauser, Frank D. Ingraham, and the Chairman. The Director of the Hospital and the Director of Development are *ex officio* members.

All but one of the above named physicians have been active on the Committee since the expansion of The Children's Hospital into The Children's Medical Center in 1947. This title was amended by State legislation in 1959 to "The Children's Hospital Medical Center," a step on the part of the Trustees to achieve corporate identity of The Hospital and the Medical Center and thus move, insofar as feasible, toward closer integration of the family of institutions listed on the title page of this Annual Report.

The plan that created The Children's Medical Center called for the gathering together, within one organization, of all aspects of Medicine, Surgery and the Laboratory Sciences that concern themselves with the normal and the sick infant, child, and adolescent. The pattern of centralization, encompassing a flexibility in the manner of merger or affiliation, has permitted institutions interested in children to join together and, in so doing, not only create a great medical center but strengthen themselves. Some developments in this direction have exceeded all expectations in the dimensions of the programs achieved—for example, the Judge Baker Guidance Center and The Children's Cancer Research Foundation. These two institutions and the Children's Mission to Children, which is concerned with social aspects of child care, are independent corporations affiliated with The Children's Hospital, the Infants' Hospital, and other units comprising the more unified administrative structure known as The Children's Hospital Medical Center.

This C. H. M. C. structure contains the facilities for bed care and most of the ambulatory services, and it houses the departments of Radiology and Pathology, the Clinical Laboratories, and most of the research activities of the clinical departments. Harvard Medical School carries out the major part of its pediatric teaching function in The Children's Hospital or through the Hospital's affiliates. There are also close relations—physical, spiritual, and intellectual—with the Peter Bent Brigham Hospital, which is connected with The Children's Hospital by a bridge over Shattuck Street. A similar bridge joins the Hospital with The Children's Cancer Research Foundation, which in turn connects through

a door with The House of the Good Samaritan. The Judge Baker Guidance Center is joined to the Hospital by a tunnel.

Ten-Year Plan

In 1959, the Planning Committee drew up a development program for a ten-year period to end in 1969, when the Hospital will celebrate its Centennial. Only the first three priorities of need will be discussed in this report.

1. Out-Patient Services. The Planning Committee, in common with all students of medical care, recognizes that the Out-Patient Department (also known as the Ambulatory Services) represents one of the C. H. M. C.'s most important contributions to the care of children in this community, throughout the country, and over the world, the areas from which our patients come. A steadily changing pattern of medical care demands experience, skills, and services that are available only in institutions specially set up to deliver them; the pattern necessitates the provision of better physical arrangements for our Ambulatory Services, together with increases in the numbers of experts in the several clinical divisions of child care, whose services are needed by other doctors in the care of their patients. Such ambulatory services do not substitute for home care by the practicing physician, but afford master consultation and specialized types of diagnosis and treatment that no one can rightfully expect in the office of the most competent private practitioner.

The Planning Committee's recommendation of topmost priority therefore concerns the building of new physical facilities for out-patient clinics, so as to provide much better care to a larger number of infants, children, and adolescents and to extend the horizons of clinical research, medical education, and postgraduate training.

2. Clinical Research Facilities. Fundamental research in the sciences basic to medicine, carried on mainly in the Jimmy Fund Building of The Children's Cancer Research Foundation, has created opportunities for the several clinical departments to apply new methods, and through application further expand their efforts, in their own programs of research in diagnosis, treatment, and prevention of children's diseases. The need for more adequate clinical research facilities, and indeed for working space of any kind, has become intense. Space is needed both for laboratories and research beds if programs of clinical investigations are to be carried on within the Hospital. Plans made more than five years ago, and since that time further elaborated, call for construction of a large building housing clinical research facilities and out-patient clinics, on a site between the present main hospital building (the Farley Building, formerly known as Building B) and the Longwood Avenue building (known as Building A).

These building plans were started long before the "explosion" of

" . . . new physical facilities for out-patient clinics . . . "



" . . . new laboratories for research . . . "



clinical investigation in the teaching and research hospitals of the nation. The initiation of clinical research centers, supported in part by National Institutes of Health grants of a size never before available, has brought our hope for a new building much nearer reality.

A clinical research building is needed to bring the contributions of the basic medical sciences to the patient's bedside. The needs for such new or expanded facilities are evident in every department and division of The Children's Hospital Medical Center, including Psychiatry, Orthopedic Surgery, Cardiology and Cardiovascular Surgery, Pediatric Medicine, and Pediatric Surgery, and all their subdivisions including Neurosurgery, Neurology, Radiotherapy, Dental Medicine, Otolaryngology, and Ophthalmology, as well as other fields of activity now being developed at the Center.

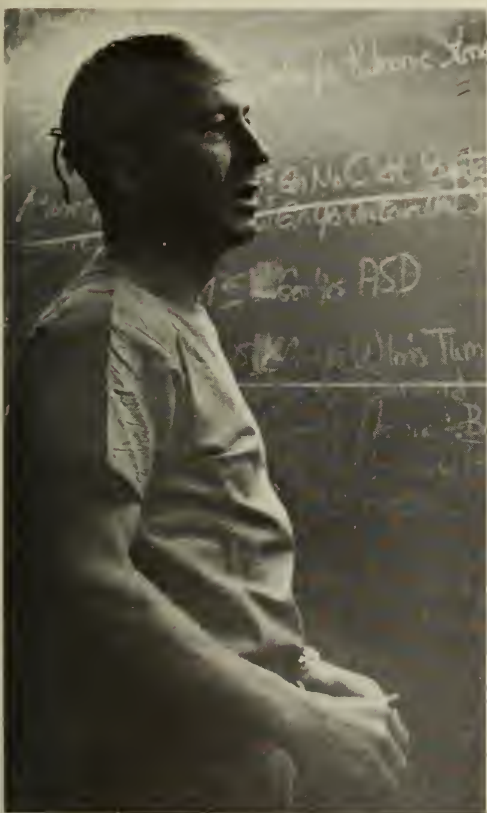
The second recommendation of the Planning Committee thus concerns the construction of such a clinical research center without delay.

3. Development of New and Specialized Services. In 1960, the Planning Committee selected Child Neurology as the field of greatest importance for immediate development. Dr. Bronson Crothers, one of the great pioneers in this field, began his work (especially concerned with cerebral palsy) more than forty years ago at The Children's Hospital, and the fine contributions of his successor, Dr. Randolph K. Byers, who will soon retire, have emphasized the value of a rapid expansion of research and patient care on this major front of Pediatrics. A benefactor has provided Harvard Medical School with funds to support a new Chair in Child Neurology at The Children's Hospital Medical Center, thus opening the way for the Medical Faculty to seek a man to lead in the further development of neurological research here. A new program in Child Neurology cannot proceed at an optimal pace, however, until facilities both for clinical and basic scientific investigations have been provided.

The third recommendation of the Planning Committee is for a general strengthening in depth of the professional personnel of all departments and divisions of the C. H. M. C.

A long list of pressing needs in the development of both the clinical and laboratory approaches to the solution of pediatric problems has been prepared by the Planning Committee. These will be described in future reports as the plans are approved by the Trustees.

The work load of the heads of departments and divisions has grown markedly since the end of World War II, but this growth has not been accompanied by an increase in the number of highly trained men in the supporting positions. The senior members of the staff have shouldered greatly increased responsibilities for the care of patients, for teaching, and for the conduct or supervision of expanding research programs in the last fifteen years. In addition, they have taken their place in the re-



" . . . a strengthening in depth of the professional personnel . . . "

sponsible governing bodies of voluntary health agencies, private foundations, and, above all, the Federal agencies concerned with medical and scientific research.

Our original concept of The Children's Medical Center included the intellectual open door. We have welcomed, and continue to welcome, physicians and scientists from all over the world who are interested in the problems of early life, and we have participated, and continue to participate, in the leadership for the creation and communication of new knowledge in pediatrics.

The Planning Committee repeatedly has stressed with pride the national and international adoption of programs in the various phases of medical research, patient care, and public health as they concern the child—plans representing multiplications and adaptations of efforts originally developed at the C. H. M. C.

The objectives of a children's medical center, as discussed, can best be preserved and perpetuated by strengthening of the staff in terms of solid, permanent support for more persons in key positions. Such a strengthening, of course, relates to—and, indeed, is interlocked with—the expansion of the facilities for ambulatory services and for clinical research described in the first two recommendations.

The greatest limiting factors in overcoming the deficit in staff have been, in sum, the lack of space and of money. These factors have been responsible for loss of key men from our staff, further intensifying the personnel deficit. Some who left us, we are happy to say, continue to carry out the broad mission of the C. H. M. C., for they hold positions of leadership in hospitals and medical schools throughout the United States and in many other parts of the world.

The Harvard Medical Center

We cannot close this brief review without commenting on the role of The Children's Hospital Medical Center in the Harvard Medical Center, particularly taking note of two new programs in the Longwood Avenue area which, in their fulfillment, will enhance our future in pace with that of the Medical School, School of Public Health, and the other teaching hospitals associated with the School.

The Children's Hospital is one of seven associated teaching hospitals participating with the Medical School in "A Program for Harvard Medicine," a development effort launched in 1960 and aimed primarily at strengthening the total Medical Faculty. The program calls for the raising of \$58,000,000, a portion of which is earmarked for support of the Hospital's teaching staff. The extent of the C. H. M. C.'s enthusiastic participation in the Harvard Medical Center's program may be judged from the fact that its President, Mr. Wolbach, is Treasurer of "A Program for Harvard Medicine."

A second program of current interest is the proposed creation of a

" . . . the Children's Hospital Medical Center in the Harvard Medical Center . . . "



Harvard "Hospital Complex," an objective most easily visualized in terms of the creation of one of the "University Hospitals" associated with the School. The combined hospital proposed would include only a few of the several members of the Harvard family of teaching hospitals. The proposal is to construct a hospital complex on property owned by the Peter Bent Brigham Hospital—the ultimate solution for the space problems of the Brigham. This plan offers a challenge and an opportunity to The Children's Hospital Medical Center to join in all activities, where possible and where feasible, with those hospitals for adults which make up the complex. The potential gain lies in a combining of administrative and/or professional services wherever greater efficiency and economy may be achieved. The Children's Hospital Medical Center has approached the question of its participation and role in planning the hospital complex with deep and sympathetic interest. Its Chiefs of Orthopedic Surgery and of Neurosurgery also head those services in the Brigham, and there is a long tradition of close and happy cooperation between the two institutions, and with other members of the proposed complex, such as the Boston Lying-In Hospital.

Careful study is being given to the possibility of any means of combining services for the good of the patient. The Planning Committee emphasizes, however, that when all such studies are finished, there still will remain an organization devoted primarily to infant, the child, and the adolescent—The Children's Hospital Medical Center. It is our belief that we will be most effective in carrying out our own mission by the pursuit of effective relationships with surrounding institutions. More explicitly, we believe that in the future, as in the past, our greatest contribution will be made if we continue as a separate group of institutions identified with child care, but working in the closest possible harmony and cooperation with the adjacent hospitals for adults, and always within the magnificent academic setting of the Harvard Medical School, School of Dental Medicine, and the School of Public Health.

Sidney Farber, M.D., *Chairman, Planning Committee*



" . . . There will remain an organization devoted primarily to infant, child and adolescent . . . "



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ASSISTANT PHYSICIANS

Mildred F. Jefferson, M.D. (to 12/31/60)
Anna Mitus, M.D.

RADIOTHERAPIST

Giulio J. D'Angio, M.D. (See Radiology)

CLINICAL RESEARCH ASSOCIATE IN MEDICINE

Miriam D. Manning, M.D.

CONSULTANTS

MEDICINE

Benjamin Alexander, M.D.

COMPARATIVE PATHOLOGY

Donald L. Augustine, M.D.

DENTISTRY

Harry K. Bailey, D.M.D.

ORTHOPEDIC SURGERY

Joseph S. Barr, M.D.

UROLOGY

Hathorn P. Brown, M.D.

OPHTHALMOLOGY

Paul A. Chandler, M.D.

DERMATOLOGY

Austin W. Cheever, M.D.

NEUROLOGY

Stanley Cobb, M.D.

OPHTHALMOLOGY

David G. Cogan, M.D.

PATHOLOGY

Gustave E. Dammin, M.D.

MICROBIOLOGY

Bernard D. Davis, M.D.

PSYCHIATRY

Felix Deutsch, M.D.

MEDICINE

Lewis Dexter, M.D.

OPHTHALMOLOGY

Edwin B. Dunphy, M.D.

MEDICINE

Kendall Emerson, M.D.

PHYSIOLOGY

Benjamin G. Ferris, M.D.

ANESTHESIOLOGY

Jacob Fine, M.D.

MEDICINE

Sydney S. Gellis, M.D.

UROLOGY

J. Hartwell Harrison, M.D.

PATHOLOGY

Arthur Hertig, M.D.

DERMATOLOGY

William R. Hill, M.D.

PATHOLOGY

Oscar Hirsch, M.D.

ANTHROPOLOGY

William W. Howells, Ph.D.

ORTHOPEDIC SURGERY

Meier S. Karp, M.D.

INFECTIOUS DISEASE

Edward Kass, M.D.

DENTISTRY

Owen W. Kite, D.M.D.

PHARMACOLOGY

Otto Kraye, M.D.

PHYSIOLOGY

Eugene M. Landis, M.D.

EDUCATION

Edward Landy, Ed.D.

MEDICINE

Samuel A. Levine, M.D.

RADIOLOGY

Joseph Marks, M.D.

NUTRITION

Jean Mayer, Ph.D., D.Sc.

PATHOLOGY

William Meissner, M.D.

SURGERY

Francis D. Moore, M.D.

OBSTETRICS

Duncan Reid, M.D.

CHILD HEALTH

William M. Schmidt, M.D.

Herbert Selenkow, M.D.

OPHTHALMOLOGY

Albert E. Sloane, M.D.

RADIOLOGY

Magnus Smedal, M.D.

NUCLEAR MEDICINE

Arthur Solomon, M.D.

GYNECOLOGY

Somers H. Sturgis, M.D.

PREVENTIVE MEDICINE

Carl E. Taylor, M.D.

NEOPLASTIC DISEASES

Grantley Taylor, M.D.

MEDICINE

George W. Thorn, M.D.

SURGERY

Carl W. Walter, M.D.

PATHOLOGY

Shields Warren, M.D.

INFECTIOUS DISEASES

Louis Weinstein, M.D.

STOMATOLOGY

David Weisberger, M.D.

PARASITIC AND VIRAL DISEASES

Thomas H. Weller, M.D.

PHYSIOLOGY

James L. Whittenberger, M.D.

NEUROPATHOLOGY

Paul Yakovlev, M.D.

EMERITI

ORTHOPEDIC SURGEON, EMERITUS

Albert H. Brewster, M.D.

CONSULTANT IN MEDICINE, EMERITUS

C. Sidney Burwell, M.D.

CONSULTANT IN MEDICINE, EMERITUS

Allan M. Butler, M.D.

CONSULTANT IN CHILD HEALTH, EMERITUS

Martha M. Eliot, M.D.

CONSULTANT IN RADIOLOGY, EMERITUS

Albert Ferguson, M.D.

PHYSICIAN, EMERITUS AND ALLERGIST, EMERITUS

Lewis W. Hill, M.D.

PHYSICIAN, EMERITUS

Eliot Hubbard, Jr., M.D.

SURGEON-IN-CHIEF, EMERITUS

William E. Ladd, M.D.

SURGEON, EMERITUS

Thomas H. Lanman, M.D.*

ORTHOPEDIC SURGEON, EMERITUS

Robert H. Morris, M.D.

CONSULTANT IN SURGERY, EMERITUS

Charles G. Mixer, M.D.

CONSULTANT IN SURGERY, EMERITUS

Francis C. Newton, M.D.

ORTHOPEDIC SURGEON-IN-CHIEF

Frank R. Ober, M.D.*

CONSULTANT IN OTOLARYNGOLOGY, EMERITUS

Leroy A. Schall, M.D.

ORTHOPEDIC SURGEON, EMERITUS

James W. Sever, M.D.

PHYSICIAN-IN-CHIEF, EMERITUS

Richard M. Smith, M.D.

CONSULTANT IN CHILD HEALTH, EMERITUS

Harold C. Stuart, M.D.

CONSULTANT IN OPHTHALMOLOGY, EMERITUS

Frederick A. Verhoeff, M.D.

CONSULTANT IN INFECTIOUS DISEASES, EMERITUS

Conrad Wesselhoeft, M.D.

PHYSICIAN, EMERITUS

Edwin T. Wyman, M.D.

* Deceased.





REPORTS OF CHIEFS OF THE MEDICAL SERVICES

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IN MEMORIAM

On December 25, 1959, Dr. J. Lewis Bremer, embryologist, who worked in the Pathology Department for eighteen years, died at the age of eighty-five.

On July 21, 1960, Dr. William G. Lennox died. Dr. Lennox, who was seventy-six years old, was the founder of our Seizure Unit and a pioneer in the study of epilepsy and the crusade for social enlightenment regarding victims of this disease. Further comment may be found in the Physician-in-Chief's report.

On October 4, 1960, Dr. David S. Grice was killed in an airplane accident at Logan Airport. Dr. Grice, who was forty-six years old, came to The Children's Hospital for training and was a member of the staff from 1944 to 1958, when he left to accept the appointment of Professor of Orthopedic Surgery at the University of Pennsylvania. His friends and former patients have contributed approximately \$8,000 for a Grice Memorial Fund at The Children's Hospital.

On December 26, 1960, Dr. Frank Ober died at the age of seventy-nine, after a brief illness. Orthopedic Surgeon-in-Chief for fifteen years prior to his retirement in 1946, Dr. Ober was a member of The Children's Hospital staff from 1913 until his death. A clinical Professor of Orthopedic Surgery at Harvard Medical School and former Assistant Dean, he established the Frank Ober Orthopedic Research Fund at this Hospital in 1941.

REPORT OF PHYSICIAN-IN-CHIEF

SERVICES TO PATIENTS

The significant changes in the character and volume of the Center's services to children are nowhere revealed more plainly than in a comparison of the operations of the Medical Department in the year ending September 30, 1960, with its operations in previous years. A study of the table on page 46, showing the estimated volume of services in the current year, discloses striking differences, and impressive growth and suggests the existence of definite needs. Certain trends are unmistakable. Out-patient or Ambulatory Services have grown strikingly in volume, by 72 per cent since 1946-47, by 36 per cent over the past four years. This growth of ambulatory services reflects three processes of change: (a) the development of new services, such as the Child Health Unit and the Adolescent Unit; (b) an extraordinary expansion in the activities of the Medical Emergency Clinic, which has become the largest medical clinic; and (c) an increase in the case load of certain special clinics, particularly the Cardiac Clinic. While this growth has occurred, there has been a decline in the activity of the general Medical Out-patient Clinic, which mainly reflects the development of adequate facilities and staff for the management of acute illness in the Medical Emergency Clinic.

Over the same period, there have been equally important changes in the volume and character of our In-patient Services. While this number of admissions to the acute services has risen by 32 per cent since 1946-47, the number of hospital days of care has declined by 46 per cent, a trend which is reflected in a much shorter average length of stay of 34 per cent. For all medical in-patient services over the past thirteen years, the number of ad-

missions has risen by 29 per cent, and the number of hospital days has declined by 45 per cent. All this shows why we have been able to care for more children in the hospital with fewer medical beds, and also why, with a high turnover of sick patients, more personnel are needed and costs have risen. These changes presumably reflect better medical care and a higher standard of living in the community, population trends, and improved methods of treatment in the hospital. It is interesting that hospital admissions have been rising despite virtual elimination of poliomyelitis as a major disease requiring hospital care. However, it seems likely that the trend of rising admissions will continue only if we draw from an increasingly large population base or provide more extensive services to the low-income groups moving into the city from the South and from Puerto Rico. The incidence of disease is high among such groups because of poor socio-economic conditions.

On the medical services last year there were 159 deaths. Although the Medical Services care for children of all ages up to twenty years, 59 per cent of all deaths occurred in newborn infants and 78 per cent in newborns and infants under three years. These figures emphasize the well-known fact that the bulk of childhood mortality is in infancy and particularly in the first month of life, and that its principal causes are congenital malformations, particularly of the heart, and perinatal disease.

The Medical Service as a whole may be thought of as a large and complex pediatric practice, the services being given by a large group rather than by a single physician. It includes, in different proportions to be sure, all the functions of a practicing physician, as follows:

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

Health supervision of children and home visits to sick children. These two prime functions of the practicing physician are provided to a selected group of families through the Child Health Unit and its Family Care Program, not because such services are lacking in the community but because they offer invaluable experience for education of the future physician and provide a small pediatric practice within which research upon many aspects of family medicine can be carried on.

Twenty-four-hour emergency service. The Medical Emergency Clinic provides this service. Closely integrated with it is the Poison Information Center, which provides information for physicians and parents upon the ingredients, toxicity, and recommended treatment for any chemical substance ingested accidentally by a child.

Hospitalization for illness. The Inpatient Service provides this care.

Consultation for less acute illness. This major service is available on appointment for children up to twelve years of age in the Medical Outpatient Department and for children over twelve years in the Adolescent Unit, and occasionally by admission to the wards for study.

Long-term medical supervision and rehabilitation of children with chronic illnesses. These services are primarily the function of the various special clinics staffed by the same group of doctors. Regular attendance at a special clinic with particular knowledge of the disease provides the continuity in care and in doctor-patient relationship which is so important in treating children with chronic disease. Usually the day by day medical care of the child is provided by the family physi-

cian, the long-term management of disease being directed by the Hospital Staff.

These last four are essential services filling a very real need. In a sense, The Children's Medical Center functions as three hospitals in one: as a community hospital serving the general medical needs of a considerable group of children in the Greater Boston area; as a regional hospital providing consultation service for physicians and community hospitals in the New England area; and a final court of appeal for distraught families who may come for help with a sick child from anywhere in the world. These last two functions are what make The Children's Hospital Medical Center a unique institution. They depend primarily on the extraordinary diversity of talent, on the tremendous experience of the staff and on the unique

VOLUME OF SERVICES

OUT-PATIENT SERVICES

| (Total Visits) | 1946-47 | 1951-52 | 1956-57 | 1957-58 | 1958-59 | 1959-60* | Per cent change since | |
|---------------------|---------|---------|---------|---------|---------|----------|-----------------------|---------|
| | | | | | | | 1946-47 | 1956-57 |
| ALL MEDICAL CLINICS | 24,360 | 24,425 | 30,939 | 31,156 | 38,622 | (41,977) | +72% | +36% |
| Child Health Unit | — | — | 2,839 | 2,146 | 3,105 | (3,081) | — | — |
| Medical Emergency | — | 4,798 | 5,506 | 5,422 | 12,274 | (14,450) | — | — |
| General Medical OPD | 13,470 | 7,922 | 7,701 | 6,595 | 6,693 | (6,322) | — | — |
| Adolescent Unit | — | 600 | 4,827 | 5,116 | 5,249 | (5,897) | — | — |
| Special Clinics | 10,890 | 11,705 | 10,057 | 10,991 | 11,901 | (12,227) | — | — |

IN-PATIENT SERVICES

Acute Services

| | | | | | | | | |
|---------------------|--------|--------|--------|--------|--------|----------|------|------|
| Admissions | 2,261 | 3,326 | 2,917 | 2,818 | 3,417 | (3,312) | +32% | +12% |
| Hospital Days | 33,926 | 29,039 | 26,484 | 27,189 | 27,834 | (26,796) | —21% | +1% |
| Average Stay (Days) | 15 | 8.7 | 8.4 | 9.6 | 8.1 | (8.1) | —46% | —3% |

Chronic Services

| | | | | | | | | |
|---------------------|--------|--------|--------|--------|--------|----------|------|------|
| Admissions | 464 | 443 | 253 | 189 | 208 | (218) | —53% | —13% |
| Hospital Days | 32,692 | 29,682 | 20,757 | 13,451 | 10,189 | (10,111) | —70% | —50% |
| Average Stay (Days) | 70 | 67 | 82 | 71 | 50 | (46) | —34% | —44% |

TOTAL IN-PATIENT

| | | | | | | | | |
|---------------|--------|--------|--------|--------|--------|----------|------|------|
| Admissions | 2,725 | 3,769 | 3,270 | 3,007 | 3,679 | (3,530) | +29% | +8% |
| Hospital Days | 66,618 | 58,721 | 47,241 | 40,640 | 38,023 | (36,907) | —45% | —22% |

* Figures for 1959-60 estimated as basis of 11 months' experience for Out-Patient Services and on basis of 10 months' experience for In-Patient Services. All estimates in parenthesis.

laboratory, X-ray and surgical facilities which have been built up through the years to meet the specific needs of children. Although this is a report of the Medical Department, it cannot be emphasized too strongly that by itself our department would amount to little. It is the support of the other clinical departments, including Radiology, the expert technical and scientific personnel and facilities available in the Division of Laboratories and Research, the skill and devotion of our nurses, and the conscientious efforts of all the supporting service departments that give The Children's strength.

One thing is clear: consulting practice has moved from the office of a single experienced and wise physician to institutions such as ours. It is as a specialized consultation and treatment center for children that The Children's Hospital Medical Center will fulfill its unique purpose. For such a development we need men of great ability who can devote their full time to this task. This requires money, but money is not too difficult to obtain, provided we select outstanding people. At present our need is for facilities for clinical and investigative work which will attract and hold able people at this institution. The shortage of suitable facilities — well-organized office, clinic and research laboratory space—is becoming a very serious handicap to progress in the direction along which historical necessity leads us and which offers the greatest chance of solid financial support in the future.

In discussing services to patients, we should not forget the very appreciable portion of staff devoted to giving professional advice to parents, to colleagues, and to practicing physicians. Scarcely a day goes by when a member of the full-time staff does not advise some doctor by long-distance

telephone or write one or two letters in answer to requests for information about a sick child. Could these hidden services be counted, their volume would be surprising.

EDUCATION

Medical students

The pediatric education of students from the Harvard Medical School continues to be a very important responsibility of the department. Although a constant effort is being made to improve the quality of our teaching, no major change will be possible until there is a general revision of the clinical curriculum of the Medical School. An attempt is being made, within the limitations of the allotted time, to give the students greater contact with the diversity of special knowledge in pediatrics and the wealth of clinical material to be found in The Children's Hospital Medical Center.

House staff

The Medical House Staff is large. It consists of the following groups: twenty-six on the regular in-patient house staff, eight to eleven on the out-patient house staff, and three to five filling a resident's function in Neurology, Cardiology, and Tumor Therapy as part of their training in that special field of pediatrics. Last year approximately 250 applicants were processed for the thirty-four appointments made. It is a shameful fact that this institution is the only teaching hospital in Boston, and quite possibly the only one in the country, that does not pay a reasonable stipend to all of its house officers; that the number and quality of the applicants should be what they are is gratifying.

Postgraduate students

Ever since the war, under Dr. R. Cannon Eley's direction, the Department has run a four months' postgraduate course under the aegis of the Courses for Graduates, Harvard Medical School. Starting as a refresher for returning veterans, the course now has become primarily an introduction to American pediatrics for foreign students, most of whom have gone on from our course to further clinical training after becoming familiar with our ways of doing things. In this respect, I believe it has played a very useful role, but one which we hope to improve still further.

Training for research

The vast increase in funds to support medical research since the war, as well as the expansion in the number and size of medical schools, has created a tremendous demand for people with proper training to undertake academic careers of teaching and research. In addition, the tremendous prestige of American medicine has brought many able young teachers to this country from abroad for a period of research training. Although training for research has always been an important function of this institution and of our department, particularly under the late Dr. James L. Gamble, it has grown greatly in size and importance since the war.

For example, during the year covered by this report, a total of 114 individuals, of whom sixty-five were U. S. citizens from twenty-four states, and forty-nine citizens of twenty-nine different foreign countries, enrolled in one or another training program in this department. This number includes those on the house staff, but more than half were in research training.

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

With the support of training grants from the National Institutes of Health of the U. S. Public Health Service, formal training programs for clinical investigative careers have been inaugurated in Cardiology, Hematology, Neurology, and in General Pediatrics with a strong focus on metabolism. These grants are a very hopeful development. They not only provide additional support for staff, but place the responsibility for selection of trainees upon the institution, which usually knows the applicants, instead of leaving it to a committee which does not.

RESEARCH

Research is an essential function of the department, not a luxury. Since this hospital attracts such a wealth of cases of unusual diseases, we have a particular responsibility to see that the unique opportunity so provided is used to obtain the knowledge from which alone better understanding and improved treatment can come for children everywhere.

Research is basically an individual matter—it starts as a creative process in the minds of gifted, imaginative, curious and observant people. But it requires hard, systematic, disciplined work to test the validity of hypotheses. Moreover, since the problems of disease can be solved only by bringing basic knowledge from the natural and medical sciences to bear on them through the application of a variety of new techniques, close collaboration between interested scientists and clinicians with scientific training and understanding is vital. Thus, while departmental organization and clear lines of authority and responsibility are important in the clinical, educational, and administrative work of the department, great flexibility in arrangements and opportunities to cross the boundaries of depart-

ments and disciplines are equally desirable for the promotion of research by its members. Boston is a particularly happy place in this regard.

Given the presence of an able, well-trained, curious physician and the unique opportunities at The Children's Hospital Medical Center to study disease in children and to collaborate with the great variety of scientists both within and outside this institution in the Boston area, what is needed to make him a productive clinical investigator? I believe there are four essential needs which must be met: (1) Time, (2) Security, (3) Funds, (4) Facilities.

Time

Research requires thought, reading, reflection, and labor, all time-consuming. The full-time system was designed to meet this requirement, freeing a man of the necessity of devoting most of his time to earning his living in practice.

Security

Most clinical investigation depends upon attracting and holding together a group of patients the investigator desires to study. The organization of such a team with proper financial support takes a number of years. Thus, a frequent turnover of staff in a clinical department is wasteful. To hold people, an opportunity to work on a long-term basis is essential. We need funds to underwrite several people in the department on a permanent basis, so that they can devote a life time to the study of a particular area.

Funds

Funds are necessary to provide time and security for the investigator, to support his laboratory group and to pay for the expenses of hospitalization

or clinic care of patients under investigation. For the past few years this department has been exceedingly fortunate in having a very generous grant of approximately \$100,000 per year from the John A. Hartford Foundation, which provides for the expenses of hospitalization for research study and treatment of patients with disorders of protein synthesis, with particular emphasis upon diseases of the blood. This grant has greatly increased our opportunity to study patients in the hospital, without hardship to the patient or drain on the Hospital's resources. The extent to which special funds for research from various sources, particularly the National Institute of Health, support our work will be apparent in the section devoted to the financial affairs of the department.

Facilities

Clinical investigation, particularly in a teaching hospital such as ours, requires adequate out-patient clinic space where ambulatory patients can be followed, ward space where special studies may be carried out, with offices and laboratory space for the investigators as close as possible to the wards or clinic area. At present, the research laboratories of the department's eleven research groups are in nine different buildings. In only a few instances are the amount and type of space adequate for its purpose, and there is no space at present suitable for laboratories for neurological research. Thus, the research laboratory facilities of the Department are scattered, poorly situated, and inadequate, both qualitatively and quantitatively. The Clinical Research Building was carefully planned to remedy many of these deficiencies; on the basis of these plans approximately \$750,000 was obtained from the National Institutes of Health and a lot

DEPARTMENT OF MEDICINE

more money raised from the public. The construction of this building is an urgent necessity, unless the Hospital is to lose its position of leadership and much of the grant money which it needs to support its total program, not only of research but of teaching and care of children as well. These functions are inextricably intertwined. If we slip in one of them, we shall slip in all.

FINANCIAL

An analysis of the source and amount of money spent on salaries of the professional, technical and clerical staff under the administrative supervision of the department underscores what has happened over the 37 years for which we have records: first an enormous increase in total budget, with a very small increase in the "hard" money resources of the department; second, the tremendous increase in money from gifts and grants, accounting for 77 per cent of the total budget; and third, the greatly increased administrative burden placed upon those responsible for this many people and this much money derived from so many different sources.

"Hard" money is needed to provide security for the key members of the full-time staff. It is to be hoped

that the Harvard Medical Center Fund drive will help to meet this need. There is no better investment in the future strength of the Hospital.

The increase in gifts and grants and the administrative burden which they impose, together with the growth in size and complexity of the department, made us feel the necessity for an administrative reorganization within the department. We were fortunate in being able to secure the half-time services of Mr. George L. Batchelder, Jr., starting July 1, 1960. With his experience as Business Manager of Protein Foundation since 1954 and as Business Manager of the Bay State Clinic for Rehabilitation, he understands the complexities of the budgetary arrangements of this department.

Analysis of the special funds available for the work of the department is shown in the table below.

These very large sums are not only evidence of the reputation which the Staff of this Hospital enjoys but also of the hard work of the many staff members required to obtain these many gifts and grants to support the work of the institution. Further increases in the amounts of money available for the extramural research pro-

grams of the National Institutes of Health, and changes in their grant-making policies to extend the terms of grants, to broaden the type of support for programs more than projects, and to permit consolidation of several grants into one, which are mainly the result of Dr. Sidney Farber's efforts as a member of the National Advisory Health Council, have been enormously helpful to investigators throughout the country and suggest that more and more of our research will be supported from the National Institutes of Health. However, the size of the figure for gifts from private sources should reassure those who fear that governmental support of research would discourage private giving.

PERSONNEL

During a period of fourteen months, death has taken three of the great figures who helped to give The Children's Hospital Medical Center its world-wide reputation. Dr. James L. Gamble, whose lifetime devoted "to the study of disease by the methods of chemistry" affected the care of patients in almost every branch of medicine and helped to save countless lives, died in May, 1959. Dr. Bronson Crothers, whose pioneering effort to understand the basis and management of neurological disease and particularly cerebral palsy in children, died at his summer home in Sorrento, Maine, in July, 1959. His book *The Natural History of Cerebral Palsy* based on his life's work, was just completed, and he had received word only two months before of his selection to receive the John Howland Award of the American Pediatric Society. Warm, kindly, modest, humorous, and iconoclastic, his influence upon pediatrics, and particularly upon the long succession of house officers who served as his "apprentices" during part of their train-

SPECIAL FUNDS—DEPARTMENT OF MEDICINE

(Salary Budget Only)

HOSPITAL

| | | |
|---|-----------|-----------|
| Special funds—private sources | \$312,584 | |
| Grants from National Institutes of Health | 245,314 | |
| Total Special Funds (Hospital) | | \$557,898 |

HARVARD

| | | |
|---|---------|---------|
| Special funds—private sources | 47,206 | |
| Grants from National Institutes of Health | 103,620 | |
| Total Special Funds (Harvard) | | 150,826 |

| | | |
|--|--|-----------|
| Total, all Special Funds | | \$708,724 |
| Total Special Funds from private sources | | \$359,790 |
| Total Special Funds from government (N.I.H.) sources | | \$348,934 |

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

ing at The Children's Hospital, will last for many years. Another great figure in child neurology, Dr. William G. Lennox, whose life was devoted to the study of epilepsy and who fought courageously for better treatment for the epileptic by society, died in July, 1960. Dr. Lennox came to the Hospital immediately after the war, founding the Seizure Unit, where many troubled parents found comfort and expert help and here many physicians have been trained in the total care of patients with epilepsy. He too had just completed his major book on epilepsy. He had just received the first specially bound copy from his publisher to the affectionate applause of hundreds of physicians, patients and friends gathered in the Harvard Club last July for "An Evening with Dr. Lennox," when the ultimately fatal cerebral accident began. The diagnosis and study of epilepsy have been enormously advanced by his application of electroencephalography with Gibbs. He combined the attributes of a scholar with the fervor of a missionary in his attack upon "the falling sickness," and every epileptic is his beneficiary.

Two important awards came to members of the staff this past year. At an impressive ceremony in May, 1960, at Swampscott, the John Howland Award of the American Pediatric Society was given posthumously to Dr. Crothers for his distinguished services to pediatrics, with tribute being read by a former house officer, Dr. Edward L. Pratt, now Professor of Pediatrics at Southwestern Medical College, Dallas, Texas, and by Dr. Randolph Byers of our staff. Dr. Harold C. Stuart, the founder of our Child Health Division and emeritus Professor of Child Health at the Harvard School of Public Health, received the Borden Award of the American

Academy of Pediatrics at its meeting in October 1959. These are the two major awards in American pediatrics.

Two members of our staff have left to assume positions of greater responsibility. Dr. Abraham M. Rudolph, who came to us from South Africa in 1950 and who rose from Research Fellow to Associate Cardiologist, has gone to the Albert Einstein Medical College, Bronx, New York, as Associate Professor of Pediatrics in charge of their cardiovascular work. Dr. Felix P. Heald, who served here first as a resident on the Tumor Therapy Service and then was closely associated with Dr. J. Roswell Gallagher from the inception of the Adolescent Unit, has gone to the Children's Hospital of Washington, D. C., to take charge of their Adolescent Division and their program of Postgraduate Education. Each of these men is a loss to us, but it is through such successive losses and renewals that The Children's Hospital makes one of its major contributions to the development of pediatrics in this country.

Many members of the staff contribute in a great variety of ways to the public welfare—as trustees, committee members and chairmen and advisors to private and governmental organizations in their own communities, in the Commonwealth of Massachusetts, and in the nation as a whole. Five staff members serve in an editorial capacity on important medical journals; one, Dr. Clement Smith, has been Chairman of the Pediatric Section of the American Medical Association, and another serves on the Executive Board of the International Pediatric Association. This is no ivory tower, but an institution whose members are deeply involved both as experts and as good citizens in the life of this country.

Moreover, this activity no longer

stops at our national borders. In the past year members of our staff have been on professional missions to Denmark, Sweden, Holland, England, Switzerland, Poland, and India. In fact, one member, Dr. Richmond S. Paine, has flown to England twice this summer by request to participate in international meetings on cerebral palsy. The bonds which link together those with a common interest in child health throughout the world have become as strong and as close as those which tie us to colleagues in other parts of our own country. The international character of pediatrics was particularly apparent last summer when we had the pleasure of playing host to a stream of visitors before and after the International Paediatric Congress in Montreal, at which many members of our staff played a prominent role and the President of which, Dr. Alan Ross, was a former house officer. Last year 145 visitors from forty-five countries came to visit the Department.

ACTIVITIES OF THE MEDICAL DIVISIONS

Child Health Division

Under Dr. Robert J. Haggerty's leadership the Child Health Division, founded by Dr. Harold Stuart, has become a very important focus for preventive and social pediatrics and for family medicine. The effectiveness of this division has been enhanced by its new quarters—the remodeled former Brace Shop across Blackfan Street from the Out-Patient entrance; this space provides adequate, conveniently arranged offices and a playroom, conference room above with good clinic space downstairs. In addition, an outdoor play yard, which can be entered from the Unit as well as from the rear of the old houses along Longwood Avenue where the Mater-

nal and Infant Care program and the Children's Mission are situated, has been laid out and equipped with funds from the Daffodil Club.

The Child Health Division provides staff and quarters for Well Child Conferences sponsored by the Health Department of Boston, in which instruction of medical students and house officers in preventive pediatrics is carried on.

A major undertaking of the Child Health Division is the *Family Health Care Program*. This is a small organized practice among 129 medically indigent families comprising 254 children and 258 parents living in the vicinity of the hospital. Health protection services are provided free, while a small charge is made for office and home visits for illness. Statistics for the year were:

| | |
|--------------------------------|-----|
| Visits to Clinic | |
| for health supervision | 876 |
| Visits to Clinic | |
| or home for acute illness | 538 |
| Visits for chronic illness | 122 |
| Other visits (follow-up, etc.) | 383 |

Total Patient Visits 1919

These families are cared for by the staff under two programs: (1) A house officer program, in which pediatric residents in training assume responsibility throughout their period of appointment for the provision of complete pediatric care to the children in several families, usually including one with a child with chronic illness; (2) a medical student program, given as an elective course in Family Medicine in which third year students assume the complete medical care of all the members of one or two families for a year. This latter program requires teaching from the Departments of Obstetrics, Medicine, and Psychiatry of the Medical School and from the Boston Lying-In and Peter

Bent Brigham Hospitals; parents as well as children are seen in the new quarters of the Child Health Division, a great advantage in unifying this program. The Family Health Care Program was developed primarily for educational purposes, to provide an opportunity for the future pediatrician to learn the skills of family practice as part of his total pediatric training and for students to learn more about the role and function of the physician in his traditional task of providing medical service to families. It has also become a rich source of research material in social medicine and in the epidemiology of accidents and respiratory infections, and should provide an opportunity to experiment with ways to make the work of the family pediatrician more effective and more satisfying in the future.

This educational pilot study has been assisted by a large grant to the Harvard Medical School from the Commonwealth Fund in support of the teaching of comprehensive pediatric medicine. This grant, which has also assisted the Adolescent Unit and the Department of Psychiatry, will be finished at the end of the coming year. Exact evaluation of such a program is difficult. We are convinced that such a family practice is an important adjunct to the wards and clinics of the hospital in the development of a well-rounded program of clinical teaching and research in pediatrics.

The major need of the Child Health Division for the coming period is financial support to permit continuity in the further development of the teaching and research programs which have been well established.

Adolescent Unit

Like the Child Health Division, the Adolescent Unit has played an important role in broadening the concept

of pediatric medicine and has extended the responsibilities of The Children's Hospital Medical Center beyond its walls, through participation of its staff in school health programs, language disability studies in schools, and even into a summer camp program for obese adolescent girls. In reporting on the year Dr. J. Roswell Gallagher writes:

"As the Adolescent Unit approaches its tenth year of operation, its staff and its services and physician-training program seem to be sufficiently stabilized so in the next few years increasing attention can be given to the development of an appropriate research program, to the more satisfactory bed care of adolescents admitted to the Hospital's medical service, to the development of a few specialty clinics for those adolescents whose care and study are better carried out by specialists than in a generalist setting such as the Unit's, and to the acquisition of sufficient endowment or annual gift funds to provide for the cost of the Unit's operation. Each of these matters has been given considerable thought, but none has been as actively pursued in the past as should be the case in the near future.

"The Unit's Out-Patient Service continues to grow and seems to be well regarded by its patients and by the physicians who refer patients to it. In order to preserve the atmosphere which we believe best suited to both patient care and to the training of physicians in the care of adolescents, it would seem likely that any further expansion of our staff or facilities or any significant increase in our patient load would be undesirable. At present it is our group's opinion that efforts should be directed toward maintaining and

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improving the quality of our service rather than toward increasing its size. Over the years the number of serious and unusual illnesses seen has increased considerably as has the variety of medical problems. This is no doubt due to a wider public understanding of our Unit's function and a lessening of the belief that our major concern was adolescents' behavioral disorders. This latter understanding is also reflected in the decrease in the number of serious emotional disorders referred to us: a situation which is clearly desirable from the standpoint of patients and hospital alike."

The work of this Unit has been greatly assisted by a grant from the Grant Foundation, for Staff and for traineeships.

Cardiology Division

The growth of the activities of this division has been steady and increasingly impressive. The *Cardiac Clinic*, which now must meet three (and soon four) afternoons a week, has a waiting list of over three months. The *Catheterization Laboratory*, which carries out approximately 500 procedures per year (about 2 per working day) has a waiting list of six to twelve months. The *Sharon Cardiovascular Unit* is kept full with patients undergoing hospital study and surgical treatment of cardiac anomalies, and no beds can be spared for needed metabolic studies. As methods of diagnosis and treatment improve, more and more patients with congenital heart disease survive and demand some degree of follow-up care and study, thus adding to the case load.

Dr. Alexander S. Nadas and his colleagues have built up one of the most active children's cardiac units in the world, and in consequence patients come from a wide area for help, and

students from everywhere are seeking training here. The department is productive, both in terms of trained men for academic positions elsewhere and in terms of clinical research. However, its growth poses very real problems. Although its quarters seemed very spacious two or three years ago, they are now quite inadequate. There is need for a research clinic, research beds, more office space and more and better integrated laboratory space in the immediate future. Funds to support the work of this Division are no problem, but the funds available cannot be utilized unless the space needs are met.

With Dr. Abraham M. Rudolph's departure to assume his new duties in New York, the experimental laboratory has been taken over by Dr. Robert Grier Monroe, who has just completed three years of research training in Dr. James L. Whittenberger's laboratory in the Harvard School of Public Health.

Dr. Benedict F. Massell's program of research on rheumatic fever is carried on at the House of the Good Samaritan. Thanks to a grant from the National Heart Institute to provide basic support for his research program for a term of years, it is possible to plan and carry out long-term studies of the impact of the increasingly effective modern measures for prevention and treatment upon the incidence and outcome of this important disease.

Pulmonary Laboratory

For the past few years Dr. Charles D. Cook has built up an increasingly productive and useful laboratory for the study of pulmonary physiology in children. Although severely handicapped by lack of space, this laboratory has carried out important collaborative studies of pulmonary disturbances with other groups in the

hospital—in cases of asthma, pancreatic fibrosis, and scoliosis and in children under anesthesia. Its work is supported by a grant from the National Institutes of Health and funds donated by the Lloyd family.

Allergy Division

The Allergy Clinic is one of the largest in our Out-Patient Department and its staff, who are all part-time unpaid physicians, are giving the Hospital a great deal of excellent service. Since Dr. Harry L. Mueller became Allergist two years ago, he has inaugurated a research and training program in this field, but this is still seriously hampered by lack of funds and even more by lack of space. A prospective study of the development of allergic manifestations, starting in early infancy in children with a family history of allergy, is being made with a grant from the Ross Laboratories.

Neurology Division

Dr. Randolph S. Byers, assisted by Dr. Richmond S. Paine, has continued to carry a tremendously heavy load of clinical work and consultation in this all-important area of pediatrics.

The work of the Division has been greatly strengthened in the last few years by several developments: (1) Formalization of a training program in pediatric neurology, which has been able to utilize two opportunities in the Harvard setting, a brief experience for each trainee with Dr. Derek Denny-Brown at the Boston City Hospital, and a basic course in neuro-sciences for neurological trainees organized by Dr. Paul Yakovlev; (2) The development of a splendid laboratory of Neuropathology in the Department of Pathology under Dr. Elizabeth Q. Banker; (3) Funds from the grant to The Children's Hospital Medical Center from the National

Foundation for Neuromuscular Diseases which have made these developments possible. Dr. Byers and Dr. Banker are collaborating in a long-term combined clinical and pathological study of Neuromuscular Diseases in Children which should be a very important contribution. An excellent group of Fellows in Neurology working with Dr. Byers and Dr. Lombroso have stimulated both teaching and clinical research in neurology.

The *Seizure Unit*, under Dr. Cesare T. Lombroso, continues its active program of care, teaching, and research in the field of epilepsy. Considerable investigation of the use of the electroencephalograph for localization of brain lesions at operation is being carried on with the Department of Neurosurgery as well.

The Maternal and Infant Care Program, under the direction of Dr. Richmond S. Paine, represents a new and important aspect of our neurological activities. It is responsible for long-term follow-up of selected infants observed by Dr. Stewart H. Clifford's group at the Boston Lying-In Hospital through pregnancy, delivery, and part of the first year. Together, these two integrated programs constitute the largest single project in the collaborative Study of Perinatal Factors in Brain Damage in Children being supported by the National Institute for Neurological Diseases and Blindness.

Hematology Division

Over the past twenty years Dr. Louis K. Diamond has gradually built up an exceedingly strong program of research and training in pediatric hematology. Beginning with simple hematologic studies in children with blood diseases, the group has grown and extended its work through the

Blood Grouping Laboratory under Dr. Fred H. Allen, Jr., into the field of blood grouping, normal and abnormal blood group antibodies and the treatment of erythroblastosis fetalis. The use of exchange transfusion in this disease has not only reduced mortality but almost eliminated an important cause of the athetoid type of cerebral palsy. In recent years the interests of the Hematology Division have extended into a study of aplastic anemia, with encouraging results from the use of certain steroid hormones in treatment. A clotting laboratory, headed by Dr. Campbell W. McMillan, is studying the metabolism and the physiologic and therapeutic effects of human clotting proteins, prepared by Protein Foundation, in patients with hemophilia and other hereditary disorders of coagulation. Under Dr. Park S. Gerald and Dr. Mary Efron, both of whom have recently returned from genetic and biochemical training in England, an excellent laboratory for the study of the chemical structure of abnormal hemoglobins and the relation between genetics, chromosomal abnormalities, and the synthesis of certain blood proteins has been set up. In fact these laboratories provide an ideal nucleus for a center for the study of human genetics, one of the real frontiers of modern pediatrics. These investigations have been made possible by grants from the National Heart Institute and the John A. Hartford Foundation, Inc.

Metabolic Diseases

Metabolic problems remain a central concern of the full-time staff of the department and provide the focus for our training program for future pediatric investigators. The laboratories are scattered, but the group meets regularly for critical discussion of research in progress.

(1) *Kidney diseases and mineral metabolism* are the prime interests of Dr. Francis X. Fellers, who continues to use the chemical laboratories established by Dr. James L. Gamble. In addition to supervising the care and study of patients with nephrosis, with assistance from the New England Kidney Disease Foundation, Dr. Fellers is actively investigating the metabolism of Vitamin D and renal tubular diseases.

(2) *Laboratories for the study of protein metabolism* under Dr. David Gitlin are temporarily located in beautiful new laboratory space loaned by the Children's Cancer Research Foundation. Here a group is intensively studying a number of features of the basic processes of protein synthesis with a constant effort to apply the knowledge and techniques developed in the laboratory to an understanding of human disease. Support for these laboratories comes from the National Institute of Arthritis and Metabolic Diseases and from the American Heart Association.

(3) *Endocrine Laboratories* were established a few years ago under Dr. John F. Crigler, Jr., in unused laboratory space in the House of the Good Samaritan. After a few years these laboratories have been filled to capacity. Dr. Norman I. Gold, a talented steroid biochemist, and Dr. Jerome A. Grunt, a teacher of anatomy now turned pediatrician, have joined the laboratory and supervise the training of an active group of fellows. With help from many sources, including the Ten-Aiders, the National Institutes of Health, the Medical Foundation, and some private gifts, these laboratories have been equipped and staffed, and the Endocrine group is now making a vital contribution to care, teaching and research in this Hospital.

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It is impossible to give more than a bird's-eye view of the activities of these various groups interested in one or another special field of pediatrics. Certain gaps in our coverage of medical problems will be noted. Problems of the newborn are under particularly intensive study at the Boston Lying-In Hospital by Dr. Clement A. Smith's team. Nutritional diseases and pancreatic fibrosis are cared for and studied by Dr. Harry Shwachman, with his research laboratories in the Division of Clinical Laboratories. Infectious diseases are under investigation by Dr. John F. Enders and his associates in the Division of Infectious Disease Research. There are a number of other instances where important segments of pediatrics are being studied in other departments. This is all to the good. Pediatrics is the medicine, surgery and pathology of the human during the period of growth from conception through adolescence. It needs the interest, effort and thought of men from every discipline, if its many problems are to be solved to provide better health for the coming generation.

NEEDS

The needs of the Department of Medicine are, first of all, the needs of all the departments of the Hospital—adequate stipends for house officers and new endowment to support key members of the staff on a secure long-term basis in each department. One department should not grow strong at the expense of another. The Hospital, since its services to patients, its teaching, and its research depend upon interdepartmental cooperation, should be a "balanced ship" as far as possible.

Two new ventures started in the last decade, which have been supported by temporary grants in their infancy, now require more lasting sup-

port—the Child Health Division and the Adolescent Unit.

Perhaps the most critical need is for the construction of facilities for clinical research—offices, special clinics, laboratories, record room, and library—in close proximity to the wards or out-patient clinics. Without these new facilities, in the near future, the momentum of the Hospital's development will be lost, the morale of the Staff will be impaired, and the funds which finance so much of our work will be harder to obtain. In preparation for this, we are doing everything possible, assisted by the improved Hospital accounting system, to put the financial affairs of the department in order. But we believe that it is imperative that we move ahead as rapidly as possible with the development of final plans for construction of the Clinical Research Building.

Charles A. Janeway, M.D.
Physician-in-Chief

Bibliography

- Bougas, T. P., and Cook, C. D., Pressure-flow characteristics of needles suggested for transtracheal resuscitation. *N. E. J. Med.*, 262:511, 1960.
- Bucci, G., Cook, C. D., and Barrie, H. M., Lung diffusing capacity, pulmonary capillary blood volume and pulmonary membrane resistance in congenital heart disease. *American Pediatric Society, Abstracts*, 1960.
- Cook, C. D., Fetal and neonatal anoxia. In Davis, C. H., and Carter, R. (Eds.), *Gynecology and Obstetrics*, Vol. II. Prior, 1960.
- , Barrie, H., and Avery, M. E., Respiration and respiratory problems of the newborn infant. In Levine, S. Z. (Ed.), *Advances in Pediatrics*, Vol. XI. Year Book Publishers, 1960.
- Cook, C. D., Barrie, H., DeForest, S. A., and Helliesen, P. J., Pulmonary physiology in children, III. Lung volumes, mechanics of respiration and respiratory muscle strength in scoliosis. *Pediatrics*, 25:766, 1960.
- Cook, C. D., Barrie, H., Helliesen, P. J., and DeForest, S. A., Lung volumes and the mechanics of respiration in congenital heart disease. *Society for Pediatric Research, Abstracts*, 1960.
- Cook, C. D., and Haggerty, R. J., Mycetismus (*amanita phalloides*). *N. E. J. Med.*, 262:832, 1960.
- Cook, C. D., Helliesen, P. J., Kulczycki, L., Barrie, H., Friedlander, L., Agathan, S., Harris, G. B. C., and Shwachman, H., Studies of respiratory physiology in children, II. Lung volumes and mechanics of respiration in 64 patients with cystic fibrosis of the pancreas. *Pediatrics*, 24: 181, 1959.
- Cook, C. D., and Mead, J., Maximum and minimum airway pressures at various lung volumes in normal children and adults. *Fed. Proc.*, 19: 377, 1960.

DEPARTMENT OF MEDICINE

- Cook, C. D., O'Brien, D., Hansen, J. D. L., Beem, M., and Smith, C. A., Water and electrolyte economy in newborn infants of diabetic mothers. *Acta Paediat.*, 49:121, 1960.
- Earle, D. P., Hutt, M. P., Schmid, K., and Gitlin, D., Observations on double albumin: a genetically transmitted serum protein anomaly. *J. Clin. Invest.*, 38:1412, 1959.
- Eley, R. C., Diphtheria. Method of R. Cannon Eley, M.D. In Conn, H. F. (Ed.), *Current Therapy*. Saunders, 1959.
- Fellers, F. X., Idiopathic hypercalcemia of infancy and vitamin D metabolism. *Helvetia Paediat. Acta*, 14, 1959.
- Ferris, B. G., Jr., and Cook, C. D., Respiratory physiology and its application to pulmonary disease. In Nelson, W. E. (Ed.), *Textbook of Pediatrics*. Saunders, 1959.
- Gitlin, D., Immunochemistry and its relationship to atherosclerosis. In *Connective Tissue and Atherosclerosis*. Academic Press, 1959.
- and Janeway, C. A., Turnover of the copper and protein moieties of ceruloplasmin. *Nature*, 185:693, 1960.
- Gitlin, D., Janeway, C. A., Apt, L., and Craig, J. M., Agammaglobulinemia. In Lawrence, H. S. (Ed.), *Cellular and Humoral Aspects of the Hypersensitive States*. Hoeber, 1959.
- Gold, N. I., Intermediary metabolism of cortisol. Symposium on metabolism after trauma. *Metabolism*, 8: 878, 1959.
- , Smith, L. L., and Moore, F. D., Cortisol metabolism in man: observations of pathways, pool sizes of metabolites and rates of formation of metabolites. *J. Clin. Invest.*, 38: 2238, 1959.
- Janeway, C. A., Agammaglobulinemia. In Cecil and Loeb, *Textbook of Medicine*, 10th ed. Saunders, 1959.
- , Infection, immunity and allergy in relation to pediatrics. In Nelson's *Textbook of Pediatrics*, 7th ed. Saunders, 1959.
- , Infections with the coliform, proteus, and pseudomonas groups of bacilli. In Cecil and Loeb, *Textbook of Medicine*, 10th ed. Saunders, 1959.
- , James Lawder Gamble. 1883-1959. Harv. Med. Alumni Bull., July 1959, 4.
- , James Lawder Gamble. 1883-1959. Pediatric profiles. *J. Pediat.*, 56:701, 1960.
- , Lymphocytic choriomeningitis. In Cecil and Loeb, *Textbook of Medicine*, 10th ed. Saunders, 1959.
- , The scholar and the devil's advocate. In Report of the First Institute on Clinical Teaching. *J. Med. Educ.*, 34:79, 1959.
- , The student, the patient, and the teacher as seen by Institute participants. In Report of the First Institute on Clinical Teaching. *J. Med. Educ.*, 34:101, 1959.
- et al. Designated discussion. In *Mechanisms of Hypersensitivity*, International symposium, Henry Ford Hospital, Detroit. Little Brown, 1959.
- Kamat, V. B., Hoelzl Wallach, D. F., Crigler, J. F., Jr., and Ladman, A. J., The intracellular localization of hormonal activity in transplantable thyrotropin-secreting pituitary tumors in mice. *J. Biophys. & Biochem. Cytol.*, 7:219, 1960.
- Katz, R. A., Intravenous urea in the therapy of increased intracranial pressure with lead encephalopathy. *N. E. J. Med.*, 262:870, 1960.
- Kevy, S. V., Chief resident symposium. How they run their pediatric services. *Res. Physic.*, 6:66, 1960.
- Korn, D., Demonstration of cystine crystals in peripheral white blood cells in a patient with cystinosis. *N. E. J. Med.*, 262:545, 1960.
- Lathrop, D. B., Cystic disease of the liver and kidney. *Pediatrics*, 24:215, 1959.
- Pendleton, M. E., Adrenal hemorrhage and retroperitoneal hematoma following perinatal stress. *J. Pediat.*, 56:308, 1960.
- Smith, C. A., Circulatory factors in relation to idiopathic respiratory distress (hyaline membrane disease) in the newborn. *J. Pediat.*, 56:605, 1960.
- , Neonatal pediatrics, Part III. Prevention of prenatal and neonatal deaths. *Am. Pract. & Dig. of Treatment*, 2:265, 1960.
- , Overuse of milk in the diets of infants and children. *J.A.M.A.*, 172:567, 1960.
- , The newborn infant. *J.A.M.A.*, 172:433, 1960.
- , *Physiology of the Newborn Infant*, 3rd ed. Thomas, 1959.
- , The professor, the student, and the newborn infant. *Univ. Mich. Bull.*, 15:293, 1959.
- Snedeker, L. E., et al., *Care of Children in Hospitals*. American Academy of Pediatrics, 1960.
- Sutherland, J. M., Oppe, T. E., Lucey, J. F., and Smith, C. A., Leg volume changes observed in hyaline membrane disease. *Am. J. Dis. Child.*, 98:24, 1959.
- Whittenberger, J. L., and Cook, C. D., Neonatal resuscitation. Merck, Sharpe & Dohme, *Seminar Report*, 4:22, 1959.

ADOLESCENT DIVISION:

- Gallagher, J. R., About people, not injuries. *Am. J. Surg.*, 98:332, 1959.
- , Adolescents: Their characteristics and care. Survey Paper. White House Conference on Children and Youth, 1960.
- , General principles in clinical care of adolescent patients. *Pediat.*

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

- Clin. of N. Am.*, 7:185, 1960.
- , *Medical Care of the Adolescent*. Appleton-Century-Crofts, 1960.
- , Meeting the needs of the hospitalized adolescent. In *Care of Children in Hospitals*. American Academy of Pediatrics, 1960.
- , Problems of adolescents in school and residential settings. Workshop on Emotional Problems of the Indian Students in Boarding Schools and Related Public Schools. Albuquerque, N. Mex., April 1960.
- , Specific language disability (dyslexia). *Clin. Proc. of Child. Hosp.* (Washington, D.C.), 16:1, 1960.
- and Harris, H. I., Psychiatry: behavioral problems in the adolescent. *Ann. Rev. of Med.*, 11:275, 1960.
- and Locke, W. N., Foreword. In Hermann, K., *Reading Disability*. Thomas, 1960.
- Heald, F. P., Obesity in the adolescent. *Pediat. Clin. of N. Am.*, 7:207, 1960.
- and Sturgis, S. H., Adolescent gynecology: a 5-year study. *Pediatrics*, 25:669, 1960.
- Masland, R. P., Jr., Ulcerative colitis. *Pediat. Clin. of N. Am.*, 7:197, 1960.
- Peckos, P. S., Spargo, J. A., and Heald, F. P., Program and results of a camp for obese adolescent girls. *P. G. Med.*, 27:527, 1960.
- Williams, M., A clinic for adolescents: a survey of 750 patients. *Med. J. of Australia*, Aug. 15, 1959, 201.
- ALLERGY DIVISION:**
- Hill, L. W., and Mueller, H. (Eds.), Pediatric allergy. Symposium. *Ped. Clin. N. Am.*, 6: No. 3, 1959.
- CARDIOLOGY DIVISION:**
- Nadas, A. S., Approach to diagnosis of congenital heart disease without recourse to special tests. *Circulation*, 20:602, 1959.
- and Hauck, A. J., Pediatric aspects of congestive heart failure. *Circulation*, 21: 424, 1960.
- Reynolds, J. L., Nadas, A. S., Rudolph, A. M., and Gross, R. E., Critical congenital aortic stenosis with minimal electrocardiographic changes. A report on two siblings. *N. E. J. Med.*, 262:276, 1960.
- Rudolph, A. M., Kurland, M. D., Auld, P. A. M., and Paul, M. H. (with the technical assistance of Sara R. Duncan and Mary E. Stone), Effects of vasodilator drugs on normal and serotonin-constricted pulmonary vessels of the dog. *Am. J. Physiol.*, 197:617, 1959.
- and Auld, P. A. M., Physical factors affecting normal and serotonin-constricted pulmonary vessels. *Am. J. Physiol.*, 198:864, 1960.
- Rudolph, A. M., Auld, P. A. M., and Golinko, R. J., Effects of changes of systemic and pulmonary arterial and venous pressures on bronchial collateral flow. *Fed. Proc.*, 19:March, 1960.
- , Factors affecting bronchial collateral flow in the dog. *Am. J. Physiol.*, 198:1166, 1960.
- Sasahara, A., Rudolph, A. M., Hoffman, J. I. E., and Hauck, A. J., Ventricular fibrillation during catheterization of the right side of the heart terminated successfully by external defibrillation. *N. E. J. Med.*, 261: 261, 1959.
- Young, E., Liebman, J., and Nadas, A. S., The normal vectorcardiogram of children. *Am. J. Cardiology*, 5: 457, 1960.
- CHILD HEALTH DIVISION:**
- Cook, C. D., Barrie, H., Helliesen, P., Mycetismus (amanita phalloides). Haggerty, R. J., Deaths from permanent antifreeze ingestion. *N. E. J. Med.*, 261:1296, 1959.
- , Methyl alcohol poisoning. *N. E. J. Med.*, 262:367, 1960.
- and Ziai, M., Acute bacterial meningitis in children. A controlled study of antimicrobial therapy, with particular reference to combinations of antibiotics. *Pediatrics*, 25:742, 1960.
- Lowe, B., Acute mercury poisoning. *N. E. J. Med.*, 261:409, 1959.
- Rosen, F. S., Parathion. *N. E. J. Med.*, 262:1243, 1960.
- Salber, E. J., Rejection of breast feeding. *Med. Times*, 88:430, 1960.
- Stuart, H. C., Evaluation of growth data. *J. Pediat.*, 55:803, 1959.
- , The search for knowledge of the child and the significance of his growth and development—examples from the Harvard Longitudinal Studies. Borden Award Address. *Pediatrics*, 24:701, 1959.
- et al., Longitudinal studies of child health and development, Series II. Supplement to *Pediatrics*, 24: 875, 1959.
- HEMATOLOGY DIVISION:**
- Allen, F. H., Jr., Case records of the Mass. Gen. Hosp., case 45391. *N. E. J. Med.*, 261:658, 1959.
- , Erythroblastosis fetalis. Lecture notes for third year medical students. Harvard Med. School Dept. of Obstet. & Gynecol., 1959.
- , Minimizing transfusion risks. *Mass. Physic.*, 18:273, 1960.
- , Rational blood replacement in the surgical patient. *Conn. Med.*, 24:364, 1960.
- , Review of the new blood group factors. *Quart. Rev. Pediat.*, 15:13, 1960.
- , Corcoran, P. A., and Ellis, F. R., Some new observations on the MN system. *Vox Sanguinis*, 5: 224, 1960.
- , and Diamond, L. K., Erythroblastosis fetalis: attempts at prevention by desensitization (abstract). *Am. J. Dis. Child.*, 98:503, 1959.
- , von Bercken, T., and Boyce, S. J., Crossmatching of blood for

DEPARTMENT OF MEDICINE

- massive transfusion. *Bull. Am. Assoc. Blood Banks*, 12:267, 1959.
- , Corcoran, P. A., Allen, F. H., Jr., Allison, A. C., and Blumberg, B. S., Blood groups of Alaskan Eskimos and Indians. *Am. J. Phys. Anthrop.*, 17:187, 1959.
- , Sickles, G. R., and Allen, F. H., Jr., Anti-C (Anti-rh) identified by absorption technic. *Bull. Am. Assoc. Blood Banks*, 13:234, 1960.
- Jones, A. R., and Kaneb, L., A new property of iso-agglutinins of the ABO blood group system. *Blood*, 14:1094, 1959.
- , Some properties of cross reacting antibody of the ABO blood group system. *Blood*, 15:395, 1960.
- Jones, A. R., Kaneb, L., and Abrahamov, A., A technique for the titration of "cross-reacting antibody" in group O serum. *J. Lab. & Clin. Med.*, 54:779, 1959.
- Shahidi, N. T., and Diamond, L. K., Enzyme deficiency in erythrocytes in congenital nonspherocytic hemolytic anemia. *Pediatrics*, 24:245, 1959.
- , Skull changes in infants with chronic iron-deficiency anemia. *N. E. J. Med.*, 262:137, 1960.
- , Testosterone-induced remission in aplastic anemia. *Am. J. Dis. Child.*, 98:293, 1959.
- GOOD SAMARITAN DIVISION:
- Bland, E. F., Declining severity of rheumatic fever: a comparative study of the past four decades. *N. E. J. Med.*, 262:597, 1960.
- NEUROLOGY DIVISION:
- Burnstine, R. C., and Paine, R. S., Residual encephalopathy following roseola infantum. *Am. J. Dis. Child.*, 98:144, 1959.
- Crothers, B., and Paine, R. S., *The Natural History of Cerebral Palsy*. Harvard, 1959.
- Lennox, W. C., with collaboration of M. A. Lennox, *Epilepsy and Related Disorders*. Little, Brown, 1960.
- Lombroso, C. T., and Forsythe, I., A long-term follow-up of acetazolamide (Diamox) 1 in the treatment of epilepsy. *Epilepsia*, 1:493, 1960.
- Paine, R. S., Evaluation of familial biochemical determined mental retardation in children, with special reference to aminoaciduria. *N. E. J. Med.*, 262:658, 1960.
- PAPERS PUBLISHED BY MEMBERS OF THE DEPARTMENT OF MEDICINE ON WORK CARRIED OUT IN THE DIVISION OF LABORATORIES AND RESEARCH:
- Crocker, A. C., and Landing, B. H., Phosphatase studies in Gaucher's disease. Symposium on hereditary metabolic diseases. *Metabolism*, 9:341, 1960.
- Evans, A. E., Roentgen therapy of certain complications of acute leukemia in childhood. *M. J. Roentgenol.*, 82:541, 1959.
- Ghadimi, H., and Shwachman, H., Detection of aminoaciduria in retarded children by a simple, rapid method. In Bowman, P. W., and Mautner, H. V. (Eds.), *Mental Retardation: Proceedings of First International Medical Conference*. Grune & Stratton, 1960.
- , A screening test for aminoaciduria. *N. E. J. Med.*, 261:998, 1959.
- , Evaluation of aminoaciduria in infancy and childhood. *Am. J. Dis. Child.*, 99:457, 1960.
- Ghadimi, H., Stern, M., and Shwachman, H., A study of the free amino acids in sweat from patients with cystic fibrosis. *Am. J. Dis. Child.*, 99:333, 1960.
- Green, M. N., Rickstniece, E., Valdes-Diaz, O., and Shwachman, H., Elimination of background staining in the periodic acid-Schiff method for protein-bound carbohydrates in paper electrophoresis. *J. Lab. & Clin. Med.*, 55:158, 1960.
- Enders, J. F., Katz, S. L., and Medearis, D. N., Jr., Recent advances in knowledge of the measles virus. In Rutgers University Institute of Microbiology, *Perspectives in Virology*. Wiley, 1959.
- Katz, S. L., and Enders, J. F., Immunization of children with a live attenuated measles virus. *Am. J. Dis. Child.*, 98:605, 1959.
- Kibrick, S., Role of coxsackie and ECHO viruses in human disease. *Med. Clin. of N. Am.*, 43:1291, 1959.
- Reich, P., Shwachman, H., and Craig, J. M., Lycopopenemia. A variant of carotenemia. *N. E. J. Med.*, 262:263, 1960.
- Shwachman, H., Clinical pathological conference. *J. Pediat.*, 56:551, 1960.
- , Cystic fibrosis. In *Collier's Encyclopedia*. Collier, 1960.
- , Nutrition of children with congenital metabolic disorders. *Fed. Proc.*, 18:22, 1959.
- , Therapy of cystic fibrosis of the pancreas. *Pediatrics*, 25:155, 1960.
- , Fekete, E., Kulczycki, L. L., and Foley, G. E., Effect of long-term antibiotic therapy in patients with cystic fibrosis of the pancreas. In *Antibiotics Annual*, 1958-1959.

REPORT OF SURGEON-IN-CHIEF

In 1960 the general Surgical Service of The Children's Hospital Medical Center has had the busiest year in its history. A study of statistics over the past three decades shows that during the latter half of the thirties and through the war years, our operative-load ran rather consistently between 1,300 and 1,400 per year. Following the war there was a crescendo in activities, indicated by a progressive increase in the number of operations up to about 1,700 in 1945 and 1946. Since that time, there has been an irregular load, but a general advance. In the current year, as the table below shows, a total of 2,732 operations was performed, about twice the number of fifteen years ago.

| | |
|---------------------------------------|------|
| OPERATIONS ON | |
| GENERAL SURGICAL SERVICE | |
| October 1, 1959 to September 30, 1960 | |
| Abdominal surgery | 526 |
| Hernias | 434 |
| Thoracic surgery | 519 |
| Genito-urinary surgery | 388 |
| Head and Neck conditions | 163 |
| Plastic surgery | 189 |
| Excision of Surface lesions | 101 |
| Extremity surgery | 81 |
| Diagnostic procedures | 177 |
| Miscellaneous | 154 |
| <hr/> | |
| Total operations | 2732 |

A review of the current patients on our Service shows that there is a widespread use of surgical therapy in handling abdominal conditions, intra-thoracic anomalies, cardiac malformations, urological conditions, to mention but a few. Babies and children are not immune to problems requiring surgical treatment, and indeed our experience indicates that a large number of children in the early years enter life-and-death struggles for which surgical management must be avail-

able. While one of the miracles of human life is the constancy in formation of the intricate mechanisms and systems of the living body, the fact remains that at times these complex developments do go awry. Thus parents are presented with a baby with a serious abnormality of intestine, lung, heart, kidney, bladder or other organs. One might believe that such malformations are rare, yet we find that 1,818 operations were performed here last year for the correction of various deformities. (This figure does not include statistics from our other surgical services — the neurosurgical, orthopedic, or otolaryngological — which handle anomalies in their respective fields.)

As one studies in detail the *kinds* of cases which have been brought to our attention during the last two and one-half decades, it is immediately evident that there is an outstanding difference between a surgical service such as ours and that of a general surgical service in a standard community hospital. In the latter one finds rather uniformly the same types of cases, year after year, but in increasing numbers in recent years. Conversely, in a children's hospital there always have been definite peaks in types of patients. It is characteristic to have a concentration in certain types of cases for a period, followed in subsequent years by a fall-off in case-load of this particular problem. Developments which originate at our Center have a tendency to attract the kind of patient for which this given technique is helpful. However, as such a surgical procedure becomes refined and can be made routine, this kind of surgery is gradually taken up in outlying hospitals; hence, there is a corresponding fall-off in this kind of illness coming into our Center.

Thus, the *increase in total num-*

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ber of operative cases per year (indicated above) is not merely a continual build-up of the same forms of operations which we had fifteen or twenty years ago. Instead, there have been successively a number of conditions which have been attacked here, because we could show the way to conquer in new territories. Newer techniques have constantly brought an ever wider variety of cases. Indeed, this is as it should be, for a Center such as ours should be constantly on the march. Our largest job is to provide initiative and a newer, better way of doing things. After we can perfect a technique, such learning should be passed on and employed as routine care in other hospitals in the state and throughout the country.

An objective view of our position in surgery in the United States makes it evident that our Surgical Service is not going to progress in size in the future, or even maintain its present level, if we merely rest on our laurels and continue to practice surgery as we know it today. For a continuing growth there must be an investigative spirit if we are to develop and offer to the public new and improved devices and methods of handling some of the baffling problems which children are always presenting to us. The Surgical Service feels emphatically that its future depends largely on what we can develop from the Animal Laboratory for Surgical Research, and from our analytical efforts at the level of clinical investigation. We must continually have new tricks, because only if we can pull a new rabbit out of the hat from time to time, can we hope to have a children's surgical section which is vigorous and growing.

To sum up the activities of a surgical department might sound like a cold review of statistics and a dis-

play of operative techniques which give us some justifiable pride, but we must never lose sight of the fact that we are dealing with human lives, attractive children, and valuable members of society. It is important to emphasize that high technical skill and modern scientific management of surgical disease must always be accompanied by understanding, by warmth, and by a friendly spirit, a realization that the youngster has feelings, emotions, and distress. Among his many problems, physical and psychic, there is often uppermost in a child's consciousness a sense of profound loss or abandonment, engendered by the temporary separation from his home environment. In an institution which grows like ours, there could be some fear that augmentation in size is unavoidably accompanied by relaxation in personal attention to patients and their families. Fortunately, I think the entire staff of The Children's Medical Center is constantly aware that while we have illnesses to treat, we also have children to handle and keep as happy as possible. In my files are literally hundreds and hundreds of letters, voluntarily and spontaneously written by parents, expressing thanks for the manner in which the staff doctors, the residents and interns, and the nurses have cared for their loved ones.

No surgical service can progress very far without a closely integrated Out-Patient Department. Through these portals come a high percentage of patients who eventually enter the house for major surgical work. It is therefore highly important that our Out-Patient Department be of a nature which will constantly attract new subjects. Further, almost all surgical cases require some measure of post-operative care and supervision, which are performed in the Out-Patient clinics or offices. These services should be

carried out for youngsters and their families in as quiet an atmosphere as possible, and in a place which is as attractive as we can make it. Good postoperative handling of patients and the writing of an accurate, prompt report to referring physicians have much to do with the building up in the minds of parents and outside doctors the thought that our services are competent, kindly, and efficient. These impressions determine to a considerable extent the number of patients which will be referred to us in the future. Hence, it is highly important for us to strengthen the Out-Patient Department, and make it a first-class part of our plant and activity. I am pleased to report that the Trustees have agreed to a refurbishing and redecorating of the Surgical Wing of the Out-Patient Department, which will begin very soon.

During the greater part of 1959, the Laboratory for Surgical Research had to shut down its routine activities completely, because of the extensive modernization and equipping of the unit, with the adding of a new floor above for animal quarters. Towards the end of that year investigative endeavors gradually resumed, and during 1960 they have been in full swing, and are intense and productive. We have been fortunate in having Dr. Samuel R. Schuster spend a large part of his time in the Laboratory, and are very happy to have Dr. William F. Bernhard with us as a full-time leader in research endeavors. Under these men, there have been four Research Fellows, two Research Assistants, and during the summer several medical students.

A number of projects are currently under study, including: 1. The use and control of profound hypothermia, to facilitate operations on the heart and brain, and also to help in removal of some large tumors which otherwise are thought to be inoperable. 2. A

study of blood circulation outside of the body in small subjects under 15 pounds. 3. A study of various prostheses and appliances, for replacement of damaged heart valves. 4. A study of the prevention of adhesions within the abdominal cavity, a complication which has long baffled clinical surgeons, particularly those interested in surgery of early life. 5. The setting up and production of various artificial shunts within the heart or regional blood vessels, to simulate some of the congenital cardiovascular shunts in children, thus giving us a basis for the study of the disturbed states made by these leakages. 6. A review and testing of various plastic materials, which might be helpful in the construction of an artificial abdominal wall, looking forward to the possibility of better treatment for babies who have large omphaloceles (hernias of the navel).

I feel that we can be quite proud of the Laboratory for Surgical Research. It is now housed in excellent modern quarters, has a high-grade staff, and allows us to push forward on many lines of investigation which will bring us new or improved techniques for handling many of the distressing congenital anomalies which constantly come to our hospital door for help. The Laboratory budget runs something over \$100,000 per year. Funds to underwrite this have been generously made available to us through grants from the United States Public Health Service, the American Heart Association, the Godfrey M. Hyams Trust, and literally hundreds of individual donors interested in seeing this work progress as rapidly as possible.

Listed below are recent publications from various members of the general Surgical Staff.

Robert E. Gross, M.D.
Surgeon-in-Chief

Bibliography

- Bernhard, W. F., and Gross, R. E., Extracorporeal circulation and profound hypothermia. A new surgical technique. *Proc. N. E. Cardiovasc. Soc.* (In press.)
- Bernhard, W. F., Schwarz, H. F., and Gross, R. E., Metabolic alterations associated with profound hypothermia and extracorporeal circulation in the dog and man. (In press.)
- Bernhard, W. F., Schwarz, H. F., Leand P. M., and Carr, J. G., Studies in balanced hypothermic perfusion. *Surg., Gynec., & Obst.* (In press.)
- Bernhard, W. F., Schwarz, H. F., and Mallick, N. P., Elective hypothermic cardiac arrest in normothermic animals. *Ann. Surg.* (In press.)
- , Intermittent cold coronary perfusion as an adjunct to open heart surgery. *Surg., Gynec., Obst.*, III:744, 1960.
- , Profound hypothermia as an adjunct to cardiovascular surgery. *J. Thoracic Surg.* (In press.)
- Gross, R. E., Farber, S., and Martin, L. W., Neuroblastoma sympathetico. A study and report of 217 cases. *Pediatrics*, 23:1179, 1959.
- Gross, R. F., Sauvage, L. R., Pontius, R. G., and Watkins, E., Jr., Experimental and clinical studies of a siphon-filling disc-oxygenator system for complete cardiopulmonary by-pass. *Ann. Surg.*, 151:285, 1960.
- Gross, R. F., Schwarz, H. F., Mallick, N. P., and Bernhard, W. F., Herzstillstand durch kalte coronarperfusion in normal warmen tier. *Swiss J. Med.* (In press.)
- Gross, R. F., and Woolley, M. M., Esophageal atresia and tracheoesophageal fistula. (In press.)
- Hoffman, J. I. E., Rudolph, A. M., Nadas, A. S., and Gross, R. E., Pulmonic stenosis, ventricular septal defect, and right ventricular pressure above systemic level. *Circulation*, XXII:405, 1960.
- Holder, T. M., and Gross, R. E., Temporary gastrostomy in pediatric surgery. Experience with 187 cases. *Pediatrics*, 26:36, 1960.
- Longino, L. A., and Holder, T. M., Rectal bleeding in infants and children. *Ped. Clin. N. Am.*, 6:1153, 1959.
- Longino, L. A., Woolley, N. M., and Gross, R. E., Esophageal replacement in infants and children with use of a segment of colon. *J.A.M.A.*, 171:1187, 1959.
- Mansfield, P. B., An apparatus for elective fibrillatory cardiac arrest in experimental and clinical cardiopulmonary by-pass surgery. *J. Thoracic & Cardiovasc. Surg.* (In press.)
- Nadas, A. S., Rudolph, A. M., and Gross, R. E., Pulmonary arterial hypertension in congenital heart disease. *Circulation*, XXII:1041, 1960.
- Redo, S. F., Nadas, A. S., and Gross, R. E., Atresia of the mitral valve. (In press.)
- Replogle, R. I., and Gross, R. E., Renal circulatory response to cardiopulmonary by-pass. In *Surg. Forum 46th Clin. Cong.*, American College of Surgeons, 1960.
- Reynolds, J. L., Nadas, A. S., Rudolph, A. M., and Gross, R. E., Critical congenital aortic stenosis with minimal electrocardiographic changes. A report on two siblings. *N. E. J. Med.*, 262:276, 1960.
- Richardson, W. R., and Watkins, E., Blood volume studies in pediatric surgical patients. In *Surg. Forum 46th Clin. Cong.*, American College of Surgeons, 1960.
- Sasahara, A. A., Nadas, A. S., Rudolph, A. M., Wittenborg, M. H., and Gross, R. E., Ventricular septal defect with patent ductus arteriosus. A clinical and hemodynamic study.

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REPORT OF
ANESTHESIOLOGIST

- Circulation*, XXII:254, 1960.
- Sauvage, L. R., and Gross, R. E., Observations of experimental grafts in the intrathoracic venae cavae. *Surg., Gynec., Obst.*, 110:569, 1960.
- Sauvage, L. R., Gross, R. E., Rudolph, A. M., Pontius, R. G., and Watkins, E., Jr., An experimental study of tissue and prosthetic grafts with selected application to clinical intracardiac surgery. *Ann. Surg.* (In press.)
- Sauvage, L. R., Pontius, R. G., Watkins, E., Jr., and Gross, R. E., Simple technique for implantation of experimental grafts in the outflow tract of the right ventricle. A note on defibrillation of the hypothermic canine heart. *Ann. Surg.*, 152:65, 1960.
- Sauvage, L. R., Rudolph, A. M., and Gross, R. E., Experimental replacement of the aortic arch by homografts. *J. Thoracic & Cardiovasc. Surg.*, 40:61, 1960.
- , Replacement of the main pulmonary artery bifurcation by autogenous pericardium. *J. Thoracic & Cardiovasc. Surg.*, 40:56, 1960.
- Schuster, S. R., Contribution to surgical section of Gallagher, J. R., *Medical Care of the Adolescent*. Appleton-Century-Crofts, 1960.
- , Diaphragmatic hernias in infants and children. *Quart. Rev. Pediat.*, 15:171, 1960.
- , The recognition and management of diaphragmatic hernias in infancy and childhood. (In press.)
- Smith, E. I., and Gross, R. E., The external anal sphincter in cases of imperforate anus. A pathological study. (In press.)
- Shwachman, E. E. H., and Hendren, W. H., Intestinal obstruction of the newborn infant. Usefulness of the sweat electrolyte test in differential diagnosis. *N. E. J. Med.*, 264:13, 1961.

Wesolowski, S. A., Sauvage, L. R., Sawyer, P. N., Karlson, K. E., and Fox, L., The growth of cardiovascular chambers following cardiac and aortic surgery. *J. Thoracic & Cardiovasc. Surg.*, 40:692, 1960.

The year 1960 was one of average activity for the Anesthesia Service. Anesthesia was administered for approximately 5,000 operations; this total included a sizeable number of orthopedic, neurosurgical, and cardiovascular procedures.

The most exacting problems continue to be met in newborn infants undergoing correction of serious congenital anomalies including intestinal atresias, omphalocele, diaphragmatic hernia and tracheo-esophageal fistula. Special attention was focussed on this phase of our work in the past year. Progress was made in techniques of administration, but more especially in methods of maintaining physiological stability of the infants. The use of specially constructed infant blood pressure apparatus and of continuous measurement of body temperature has been of considerable help.

A major attempt has been made to prevent and control shock during extensive operations in infants and children, this being at present our greatest single problem in anesthesia.

Considerable effort continues to be devoted to teaching. At present, residents in anesthesia come to this Hospital on regular rotation from five other teaching hospitals (Peter Bent Brigham, Massachusetts General, Lahey Clinic, Massachusetts Memorial Hospitals, and University of Miami). These residents come for periods of three or four months. In addition, training is offered on a fellowship basis to physicians who have completed residency requirements, but who wish to devote six months or more to special training in pediatric anesthesia.

Scientific investigations have been carried on chiefly at a clinical level. This year marked the introduction of a new general anesthetic agent, halothane, into our regular practice. Original investigation was carried out in

the use of a narcotic, phenazocine, this work being reported at The World Congress of Anesthesiologists at Toronto. A study of postoperative pain was reported at the annual meeting of the American Society of Anesthesiologists, and a study on shock reported before The International Anesthesia Research Society.

Robert M. Smith, M.D.
Anesthesiologist

Bibliography

Smith, R. M., Anesthesia for emergency surgery in children. *Proc. Royal Soc. Med.* (In press.)

——— and Engineer, E. H., Problems related to open heart operations in children, Part I. *Anes. & Anal.*, 39:104, 1960. Part II, *Anes. & Anal.*, 39:267, 1960.

Smith, R. M., Stetson, J. B., and Sanchez-Salazar, A., Postoperative distress in children. *Anesthesiology*. (In press.)



DEPARTMENT OF ORTHOPEDIC SURGERY

REPORT OF ORTHOPEDIC
SURGEON-IN-CHIEF

THE YEAR

The orthopedic service continued to be busy in its clinical divisions, in research, and in teaching. Compared with the previous twelve months, there were 2,000 more patient days of care on our orthopedic divisions in the year ending September 30, 1960. The Respirator Unit, too, showed an 18 per cent increase in patient days. The average daily census of orthopedic patients was fifty-eight, excluding orthopedic patients in the convalescent area of the House of the Good Samaritan. In the orthopedic out-patient divisions, there were 23,216 visits. This figure included the Growth Study, the Massachusetts Infantile Paralysis Clinic, and the outside treatment clinics for poliomyelitis. Considering only the general orthopedic out-patient clinic and the Massachusetts Infantile Paralysis Clinic, there was a drop of 8 per cent in attendance, largely due to the decreased number of visits to the Massachusetts Infantile Paralysis Clinic. The figures for the orthopedic division of the cerebral palsy clinic are not included in these figures. This clinic showed an increase.

TEACHING

The major part of our teaching of undergraduate students of the Harvard Medical School affects the third year. The schedule was revised this year, the total hours of orthopedic instruction for each student being increased from 33 to 45. These hours of instruction have been arranged so that continuity is better preserved and an increased proportion of the instruction is provided to small groups facilitating student participation. Both students and instructors received the revision favorably. Trauma and orthopedic diseases of the skeletal and neuromuscular system are forming a larger and larger portion of medicine; expansion in in-

struction in this area is greatly needed.

RESIDENTS

Our residents are the orthopedists of the future. They are the individuals upon whom the progress of orthopedic surgery depends. They will represent the Children's Hospital Medical Center everywhere. Our resident training program, if not the best, is as good as any.

During the year there has been a revision in which the program has been expanded from three to three and a half years in length. Residents serve the first year at The Children's Hospital Medical Center; the second year at The Massachusetts General Hospital. During the first half of the third year, all residents return to The Children's Hospital Medical Center; in the second half of the year, one-half the residents return to The Massachusetts General Hospital, while the remaining half serve in the postgraduate program at The Children's Hospital Medical Center, the Peter Bent Brigham, and the West Roxbury Veterans Hospital. In this program eight new residents are appointed each year, two men reporting every three months. The candidates for appointment are required to have at least two years of training after medical school, including one year of surgery. The present staff is made up of eight residents in their first year of orthopedic training, five in their third year, and one in his fourth year. In addition, there are one or two residents assigned to the orthopedic laboratory and orthopedic pathology.

Our residents are underpaid in relation to resident salaries generally and by all other judgments. For example, our assistant resident, who is in his first year of orthopedic surgery but in his third year of training, receives no salary at all. The residents then go to the Massachusetts General for their second year where they receive a mod-

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est stipend, returning to us in their third year to have a great reduction in income. It is a difficult situation. Solving the problem of resident salaries must be a top priority of the hospital.

RESEARCH

Growth and factors influencing growth continue to be a major interest in the department. Originally this started as a study of the effects of poliomyelitis upon growth of the lower extremities but its scope has enlarged tremendously. It is concerned with the causes of abnormalities of growth, with the prediction of growth, and the development of methods of correcting discrepancies in growth. From this has come prediction charts that are used everywhere and techniques which are generally used in the correction of discrepancies in length of the extremities. The enormous amount of longitudinal data which has been collected on the growth of the skeleton is a subject of active investigation. It is appropriate to pay tribute to Miss Margaret Anderson and Miss Marie Blais, research associates in this study, for their stimulating participation in this program. This work is largely supported by a research grant from the National Institutes of Health. Additional funds come from Noemi, United Order of True Sisters.

Dr. Jonathan Cohen's investigations in the orthopedic laboratory have been largely concerned with biologic reactions to metals. This is a fundamental study of the tolerance of the body to inert substances and the factors involved in their use. The causes of failures of metals which have been implanted in the human body are a particular interest. Dr. Cohen and his work are largely supported by a grant from the National Institutes of Health.

Dr. Henry Banks and the Chief of the department have participated in

a continuing investigation of the value of surgery in cerebral palsy. The contributions from this study have stimulated an increased interest in the use of surgery in spastic paralysis. This work has been supported in part by a grant from the United Cerebral Palsy Association. The U.C.P.A. also supports an orthopedic fellowship in this area. In addition, Dr. Banks is studying the healing of fractures of the neck of the femur, supported in part by a grant from the National Institutes of Health.

Dr. Trott is concerned with the development of artificial motors for use in the paralytic upper extremity and with the effect of continued heat on growth. The first of these received support from the National Foundation in relation to the Respirator Unit and the second is supported as an activity of the Public Health Service grant on growth.

Different members of our staff have many other areas of investigation and clinical research in progress. Dr. Mihran Tachdjian has been developing objective techniques for diagnostic evaluations in cerebral palsy; Dr. Paul Griffin is making a study of our experiences with bone tumors and their treatment—to mention two of the others.

Members of our department have participated in numerous scientific meetings and have had many national responsibilities of various kinds. The magnitude of these demands can be conveyed by listing some of the activities of the Chief of Service, excluding from this listing such things as addresses before local societies and state meetings:

Chairman, National Committee for the Study of Treatment of Cerebral Palsy

Member of the Executive Com-

mittee, American Academy of Orthopaedic Surgeons

Member of the Advisory Council for Orthopaedic Surgery, American College of Surgeons

Member of the Executive Committee, American Academy for Cerebral Palsy

Moderator of a Panel, "Pyogenic Infections of Bones and Joints," Annual Meeting of American College of Surgeons

Instructor in the Courses of Instruction for the American Academy of Orthopaedic Surgeons, along with Miss Anderson, on "Skeletal Age and the Control of Bone Growth"

The "Honored Guest" of the Thirteenth Congress of the Brazilian Society of Orthopedics and Traumatology, reading two papers—"Bone Growth and Correction of Discrepancies in Leg Length" and "The Place of Surgery in the Treatment of Cerebral Palsy."

In addition, the Head of the Service participated in a symposium on "Volkmann's Contracture" at the meeting of the Brazilian Surgical Society in Rio de Janeiro, and gave a series of lectures at the University of San Paulo in Brazil.

This listing illustrates the type of responsibilities which the members of our staff carry in areas removed from the hospital. They require much time but they are necessary if one properly represents the Hospital and the Medical School.

Dr. Banks, a member of the Committee for the Study of Treatment of Cerebral Palsy, gave an instructional course at the meeting of the American Academy for Cerebral Palsy on "Surgery of the Lower Extremities in Cerebral Palsy." Dr. Cohen has been active as a member of the Executive Committee and chairman of the Program Committee of the Orthopaedic Re-

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search Society, and was a participant in the Gordon Conference.

STAFF

Dr. Albert H. Brewster and Dr. Robert Morris, long senior members of our staff, were promoted to Orthopedic Surgeon, Emeritus, after many years of service to the Hospital. The Hospital is indebted to them. They gave much to it over the years and we miss their active participation.

In July 1959 Dr. Paul Griffin, after an outstanding performance as Chief Resident, joined the staff as Assistant Orthopedic Surgeon. Dr. Robert Brownhill succeeded him as Chief Resident and also did an excellent job. Dr. Brownhill, after completing his residency in June of 1960, joined the orthopedic staff of Baylor University in Houston, Texas. Dr. Charles F. Heinig in turn succeeded him. In January of 1960, Dr. Mihran Tachdjian was appointed to the staff as Assistant in Orthopedic Surgery. Dr. Tachdjian, a graduate of the American University of Beirut, had his training in surgery and orthopedic surgery in the Chicago area in the Northwestern University program. He then became associated with Dr. Edward Compere, Professor of Orthopedic Surgery at Northwestern and in the Armed Services. He has had a brilliant record wherever he has been. We are pleased to welcome Dr. Griffin and Dr. Tachdjian to our staff.

Our staff has worked at full capacity throughout the year. In certain areas it has been overextended in its responsibilities and would be more productive if it were not so busy. The only area that has suffered is research. Considering that our staff provides the teaching and clinical supervision of orthopedic surgery at the Peter Bent Brigham and the West Roxbury Veterans Hospital, it becomes apparent

that it has much to do. A busy staff is a healthy staff but fewer clinical demands would lead to greater productivity. Plans are underway for its expansion.

More and more in the changing pattern of medicine, an endowed chair in a department such as ours becomes essential if it is to carry out its work in the best possible way and contribute most to the field. Under the present arrangement, the Chief is primarily responsible for support of the department, although the Hospital has been of great assistance. Income from the practice of orthopedics is the primary source of support. It seems essential to the future that an endowed professorship at Harvard Medical School be established in this hospital with provision also being made for the support of other positions in the department so that greater stability and depth of staff can be established.

POLIOMYELITIS

One of the major changes affecting our department has been the decreasing number of cases of poliomyelitis. The annual incidence has been much reduced since the severe epidemic of 1955, in which there were more cases of poliomyelitis in Massachusetts than in any previous year. It is the natural epidemiologic characteristic of the disease to have few cases for several years after a big epidemic such as we had in 1955 but a major factor in the lower incidence is the use of the Salk vaccine. This vaccine has not given an absolutely dependable immunity from the paralytic disease but it certainly has had a major inhibiting effect. One may expect poliomyelitis to show a decreasing trend so that it is no longer a serious threat. This expectation must be a part of our plan.

The treatment of the acute disease and convalescence were not prob-

lems in the past year but the patients who have had the disease in prior years still remain a major concern. They require medical care, they require surgery, and general measures of rehabilitation. They will require help for many years. A child who has any significant degree of paralysis needs supervision until he is grown and some care is indicated after that. Providing for the care of these individuals has suddenly become more difficult in that there has been a major change in the financial aid which is available for patients with poliomyelitis.

As a background, it seems appropriate to review the relation of this hospital to the treatment of poliomyelitis over the years. This hospital, in fact, has had a distinguished history in this field. Many of those who have contributed most to knowledge regarding this disease and its treatment have been members of this staff over the years, beginning with Dr. Robert W. Lovett, the Chief of Orthopedic Surgery from 1912 to 1922.

In 1916 Dr. Lovett was largely instrumental in forming the Harvard Infantile Paralysis Commission, organized at the time a large epidemic created a panic of fear and apprehension in Massachusetts and in New York. The Commission was formed for the care and investigation of anterior poliomyelitis. Its original clinic was located at Children's and this clinic has been maintained continuously since that time. The director of the clinic has always been a member of the orthopedic staff here at the Children's Hospital. As a part of this program, in addition to the central clinic, there have been regular treatment clinics held in various outlying cities and towns over the years, all conducted by the Children's staff.

In 1946 Harvard Medical School, as a part of a move in which it

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severed all direct relations with the care of the patients, asked that the auspices of the Harvard Infantile Paralysis Clinics be transferred to the Hospital if this was possible. Accordingly, in that year the clinics became the Massachusetts Infantile Paralysis Clinics of the Children's Hospital. Under this title the Clinics have continued to thrive under the same organization and plan over the years. Outside treatment clinics are still held in Beverly, Dedham, Haverhill, Lawrence, Lowell, Malden, Medford, Quincy, Somerville, and Waltham. The organizational plan was one which has been copied widely since it provided a continuity of care in chronic disease and made maximal use of skilled personnel in caring for such a disease. There have been only three directors of the clinics since 1916—Dr. Lovett, Dr. Arthur Legg, and Dr. William T. Green.

In addition to many contributions in the total field of poliomyelitis, the Clinics have a particular relation to education in poliomyelitis and problems created by epidemics over the country. In collaboration with the National Foundation, Children's Hospital maintained for many years a Poliomyelitis Emergency Unit. This unit was called to many areas during devastating outbreaks to give temporary help and organize local groups in the care of the disease. On one occasion during the second World War the unit was sent to Germany when an epidemic arose affecting the Armed Services in that area. For many years two postgraduate courses a year, of a week's duration, were given for physicians, instructing them in the treatment of poliomyelitis. These courses, along with annual courses for nurses and for physical therapists, were fostered by the National Foundation,

which provided appropriate scholarships.

Originally the Harvard Infantile Paralysis Commission had an annual drive to support the Clinics. These were well received and supported. In 1940 New England Chapters of the National Foundation asked the Harvard Infantile Paralysis Clinics to desist from raising funds to support the Clinics since, they said, it interfered with their fund raising; they indicated that they would support the Clinics. Accordingly, after many conferences, an agreement evolved in which the Chapters of the National Foundation agreed to support the Clinic, based on its annual budget in relation to the number of patients treated during the year. The per capita cost was determined and each Chapter agreed to support the cost of care of the patients from their county. This was adopted in 1940 but it was not until 1944 that it became a reality. This was done on an annual basis and worked out as an efficient and pleasant arrangement over a 15-year period, both to the Chapters and to the Clinic.

Last year, however, the Chapters had increasing difficulty in meeting their payments. By July 1, 1959, they indicated that they were no longer in a position to pay for braces or other apparatus except under unusual circumstances. In January they indicated that they were no longer able to maintain their former financial support of the Clinics. Prior to this, as far back as 1916, no charge had been made to the patient for clinic service. During this time it had been self-supporting except for the space provided by the Children's Hospital. Any remodeling of the area had been provided by Clinic funds.

It was necessary, therefore, on April 1, 1960, to institute charges for visits and for physical therapy in the

Clinic. For many patients of the Clinic this has been a difficult change, particularly if they have had expensive apparatus to purchase and maintain. In addition to the problems of patients who are unable to pay, there has been considerable reaction to the new situation by other patients and their families, inasmuch as they had been accustomed to receiving this service without charge.

This changed relation of the National Foundation to the support of poliomyelitis has also cast its shadow upon the patients who need hospital admission for surgery and other care. No longer does the Foundation freely underwrite the costs. In fact, a considerable amount is still due the hospital and the clinics for medical care during 1958-59. This changed relation in the National Foundation has arisen in part from the fact that the Foundation has broadened its base of interest and extended it to include other diseases. More than this, however, is the fact that it did not have sufficient funds in 1960 to meet its obligations. In the meantime, the problems of the patients who have had poliomyelitis and need care and rehabilitation remain with us.

It is well to say, however, that the National Foundation does still aid the Respirator Unit to the extent of an annual grant of \$54,434. For this we are most grateful. Even here, however, the problems of hospitalization arise in that formerly the Chapters of the National Foundation gave additional support for the care of patients from their Chapter by paying a per diem charge. This is no longer available in most instances.

THE COST OF CARE

The changing pattern of support in poliomyelitis stimulates other comments regarding the cost of patient

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care. Hospitalizations for the treatment of the crippled child are likely to be longer than for many other types of illness. The increasing cost of medical care and the decreasing proportion of these costs that are met by income from endowed funds compound this issue. The increased numbers of patients whose hospitalization is covered by plans of voluntary insurance has been a big factor in meeting a part of this problem. Even where coverage exists, however, it is likely to be only partial in its extent. Support from additional sources is needed.

One program that has been of great assistance over the years in providing help to the crippled child and to the hospital in its care for such a child has been the Massachusetts Crippled Children's Services. Many of the members of our orthopedic staff are consultants for this program and, as consultants, hold monthly clinics for the Commonwealth in various parts of the State. In turn, the majority of the patients from these particular clinics are admitted here at the hospital for their surgery or for other care. The Crippled Child's program underwrites the cost of care and the hospital, in turn, helps the State provide for effective, efficient medical care at a minimal cost provided all factors are considered. The patients are treated in the environment of a teaching program, which not only provides the best of care to the patient but also provides for the values of observation and education of the student and resident as well.

The Crippled Children's Service supports the cost of hospitalization of these patients but does not pay medical fees for surgery or for medical care. It does provide a fee for the actual conduct of monthly outside clinics. This is an arrangement which we hope will continue to be fostered

by the Commonwealth and by the Hospital. The Crippled Children's Services are under the Commissioner of Health and the immediate direction of Dr. Janice Rafuse. Our Service is privileged to participate in this program.

Such support aids the hospital immeasurably in providing a strong program for the handicapped child which, in turn, is available to all our citizens whether they are in the State program or not. If this care comes to be provided more and more by state institutions, it will greatly weaken the care of the crippled child not falling under the aegis of a state program. I believe it is most important that the present arrangement be preserved and, indeed, expanded. Certainly the plan existing in certain states and counties to assist voluntary hospitals in providing care through governmental aid has much to be said for it.

We are convinced that, one way or another, increasing assistance will arise. New programs are arising. Whatever the source, we must be prepared to provide the service which merits support.

Basically, if the hospital had increased endowment, many of our problems would be solved. It is proposed that deficits arise because our percentage of occupancy is not high enough. In fact, one of the factors reducing our occupancy, as far as the crippled child is concerned, is the cost of care. If the hospital's endowment were sufficient to aid these patients in meeting their costs, the problems of occupancy and, indeed, the deficit would be answered together. Fundamentally, a hospital such as ours will always have a deficit if it is carrying out its duties to the full. It is only by increasing endowment income, special funds, and support by programs assisting in the

cost of medicine that we can remain solvent.

BUILDING

The John Wells Farley Memorial Building has given us excellent facilities for the care of the in-patient. In fact, if we were asked to recommend new accommodations for our orthopedic patients, we would be hard put to improve upon the present plan. The wards are well arranged. The children of various ages can be grouped as they should be. A plaster room on the division has proven to be a most effective arrangement. The close relation of the functional training room and physical therapy, all combine to make this a very satisfactory unit.

By contrast, our out-patient clinic leaves much to be desired. The present facilities are unattractive, crowded, and poorly arranged. They have little appeal to the patient and make work difficult. In the shifting pattern, ambulatory services become a larger and larger part of medicine. Many of the conditions which were formerly treated in the hospital through long stays can now be treated in the clinic. The outpatient clinic, too, is the area where a hospital meets a large part of its public. It should be able to greet them well. This our hospital cannot do under the present circumstances. A new ambulatory clinic area is greatly needed.

Another great need for space is in the area of research. It is quite essential to our department that our research activities be increased. Our department has been the recipient of certain gifts of funds which give us a certain amount of hard-core support for increasing activity. We are striving to increase this amount. With the increasing availability of support from research grants, our research ac-

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tivities can and should be expanded. Our laboratory areas are confined to the Growth Study area, on the sixth floor of the Bader building, and to a laboratory in the Jimmy Fund building, available to us through the good offices of the Cancer Research Foundation and Dr. Farber. We do have a small laboratory, the Saltonstall Laboratory, on the second floor of the Farley Building. At the present time it is being used largely by the department of cardiology, which was in great need for space close to X-ray. Since we had the space in the Jimmy Fund Building, we were able to free a part of the second floor laboratory room temporarily for their use.

Expansion of research is essential to the health of our department and with it more space is necessary. It is our conviction that a building housing ambulatory clinics and research laboratories is a pressing need of the hospital.

VOCATIONAL GUIDANCE

As the Hospital increased the age of the children for which it is responsible, the need for vocational guidance of the handicapped child assumes greater and greater importance. If we provide maximal services for the handicapped child, it is important that he be directed into that vocation for which he is best suited. This means a combined assessment of his physical condition and the limitations imposed by his mental and emotional aptitudes. For example, in the patient with severe poliomyelitis, one can determine quite accurately what the particular child will be able to do physically when he is an adult. It is important to weigh all the factors which determine his potentialities. If this is done at a reasonably young age, one can guide his education, his interests, and provide training in the field

in which he can be most productive and most happy.

Over the last two years our department has fostered, with the Bay State Society, a guidance clinic which meets one day a week. The Bay State Society provided a very capable counselor, Mr. Richard LaPierre, and the clinic has been held in relation to the Massachusetts Infantile Paralysis Clinic area. This has been a pilot study, with most of the patients coming from the Infantile Paralysis Clinic, but it has indicated the values of such a service. An attempt has been made to get special funds to support this activity, but, so far, they have not become available. We need to expand our efforts in this area. There is a great need to supply better guidance to the growing handicapped child so that he may attain his maximal place in society.

A list of publications from the department is appended.*

William T. Green, M.D.
Orthopedic Surgeon-in-Chief

*We wish to thank all those who have made gifts to the department during the year, including the Ziskind Foundation, the Fuller Foundation, the Probonata Club, Dr. Howard K. Morrison, Mr. and Mrs. Eben Phillips, Mr. and Mrs. David Ross, with a special place for Noemi U.T.O.S. who year after year provide special support when it is needed. Finally, the Chief of Service wishes to express his appreciation for the loyal efforts of the Staff, the residents, the nurses, the physical therapists, the secretaries of the Department, and, indeed, for the support of the administration and trustees, and all others who have made this year what it has been.

Bibliography

- Anderson, M., and Green, W. T., The femur and tibia: growth and predictions of growth in later childhood. (In preparation.)
- Banks, H. H., and Green, W. T., Correction of equinus in cerebral palsy. In *Yearbook of Orthopedics and Traumatic Surgery*, 1959-60.
- , Adductor myotomy and obturator neurectomy for the correction of adduction contracture of the hip in cerebral palsy. *J. Bone Joint Surg.*, 42A:111, 1960.
- , Correction of hamstring contracture in cerebral palsy. (In preparation.)
- Cohen, J., Simple bone cysts. *J. Bone Joint Surg.*, 42A:609, 1960.
- and Foulz, W. S., Failure by corrosion of a Steinman pin. *J. Bone Joint Surg.*, 42A:1201, 1960.
- Cohen, J., and Maletskos, C. J., Ca⁴⁵ in the study of bone grafts in dogs. *Proceedings, Symposium of International Society of Traumatology and Orthopedic Surgery*, 1960.
- Cohen, J., and Sledge, C. B., Diastematomyelia. *Am. J. Dis. Child.*, 100: 257, 1960.
- Cohen, J., and Weinfeld, M. S., Experimental excision of muscles in the weanling rat. *J. Bone Joint Surg.*, 42A:278, 1960.
- Green, W. T., and Anderson, M., Skeletal age and the control of bone growth. In Reynolds, F. E. (Ed.), *Instructional Course Lectures, American Academy of Orthopaedic Surgeons*, 17:199. Mosby, 1960.
- Green, W. T., and Banks, H. H., Correction of adduction-flexion, internal rotation of the hip in cerebral palsy. *J. Bone Joint Surg.*, December 1959.
- Hilding, D. A., and Tachdjian, M. O., Dysphagia and hypertrophic spurring of the cervical spine. *N. E. J. Med.*, 263:11, 1960.
- Marshall, J. H., White, V. K., and

DEPARTMENT OF ORTHOPEDIC SURGERY

Cohen, J., Autoradiography of serial cross sections of undecalcified bone.

Rad. Res., 10:197, 1959.

Quigley, T. B., and Banks, H. H.,

Medical progress, treatment of fractures and dislocations, 1950-1960.

N. E. J. Med., 263:344, 1960. 263:

391, 1960. 263:444, 1960. 263:

493, 1960.

REPORT OF NEUROSURGEON-IN-CHIEF

Since its organization as a separate unit in the early 1930's, the Neurosurgical Service has grown steadily. Like other departments of the Children's Hospital Medical Center, it serves a two-fold function; namely, as a community hospital (in the greater Boston area) ministering to children with head injuries, infections, congenital anomalies and neoplasms and, secondly, as a referral and consultation service for specialized and complicated problems of pediatric neurosurgery from all over the world.

The influence of the Service has spread widely as a result of publication, in 1954, of the first textbook devoted to pediatric neurosurgery. This text, *Neurosurgery in Infancy and Childhood*, by Franc D. Ingraham and Donald D. Matson, is now out of print; its revision is one of the tasks which must be fitted in the program of the next few years. The influence of the Neurosurgical Service also has been extended by men who have received special training in childhood neurosurgery here, and gone on to practice and teach in other centers in the United States and Canada.

As a center for surgery and for training young men in this special field, the Neurosurgical Service of the Children's Hospital Medical Center is closely affiliated with that of the Peter Bent Brigham Hospital. Its four-year training program is approved by the Council on Medical Education and Hospitals of the American Medical Association and the American Board of Neurological Surgery. In addition to the staff men with regular appointments in the clinics or laboratories service, the Hospital receives a steady stream of visitors from neurosurgical centers throughout the world interested in the organization and function of this unit.

In addition to taking part in the

combined rounds and clinical pathological conferences of the whole Hospital, the Neurosurgical Service holds the following teaching conferences: monthly neuroradiology, bimonthly microscopic neuropathology, bimonthly brain-cutting, monthly electroencephalography, and monthly special conferences in neurology, laboratory investigation, or related fields.

One of the principal interests of the Neurological Service for many years has been the study of the normal circulation of cerebro-spinal fluid and the clinical treatment of various forms of hydrocephalus. Diversion of spinal fluid from the sub-arachnoid spaces into the urinary tract by modern methods was devised and first used by this Service in 1948, and has since had wide-spread use throughout the world. The newer types of shunting operations also have been continually investigated and employed.

This Service has defined a variety of congenital conditions involving the nervous system either primarily or secondarily, and has developed techniques for surgical treatment. In addition to the treatment of certain types of hydrocephalus, these include procedures for premature closure of the cranial sutures, congenital dermal sinus tracts, diastematomyelia, spina bifida and such congenital tumors as papillomas of the choroid plexus and craniopharyngiomas. The value of ACTH and cortisone as supportive treatment during surgical management of these latter tumors was first stressed in a paper from this Service in 1952. Results in afflicted children have vastly improved as a result of the cooperative efforts of the Endocrine and Neurosurgical Services.

The recognition and prompt treatment of neurological complications of congenital heart disease, particularly brain abscess, have been a

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special interest of the Neurosurgical and Cardiology Services in recent years. Many of these complications, previously almost invariably fatal, have been managed successfully with a combination of neurologic and cardiac surgery and intensive antibiotic therapy.

With construction of the new operating rooms, adequately shielded equipment made possible careful operating room electrocorticography in the study and treatment of children with various types of epilepsy. Surgical results have been most gratifying in well-selected cases.

Another recent interest of the Neurosurgical Service has been in cerebrovascular diseases, or "strokes," in childhood, a hitherto largely unexplored field. The possibility of surgical treatment of arterial occlusion, both of extracranial and intracranial vessels is being studied, particularly by Dr. John Shillito. This work is supported in part by a National Heart Institute grant, now in its second year.

The clinical work of the Neurosurgical Service, as well as the training of men in the resident staff, has been significantly improved by the imaginative, careful, and provocative help of Dr. Betty Banker and her associates in the Neuropathology Division of the Pathology Department; it is hoped that the work will continue to be expanded.

THE FUTURE

What of the Future? There are many standard neurosurgical clinical problems, such as those dealing with trauma, certain of the congenital malformations, infection, and benign tumors, that the Service will continue to attack and manage with the most careful clinical judgment and surgical skill possible. There are many areas in the field of pediatric neurological

surgery that remain to be developed. Certainly the treatment of the common gliomas of the brain has shown little progress in the last thirty years. The search continues for means of establishing differential uptake of a toxic chemical or radioactive agent in tumor as compared with normal brain tissue of sufficient degree so that an infiltrative tumor might be destroyed without similar destruction of the host's cerebral tissue. The application of intermittent or continuous perfusion techniques to temporarily isolated cerebral circulation to achieve higher concentration of cytotoxic agents in the tumor may contribute to this goal. Complete cessation of circulation to the brain for periods long enough to carry out complicated surgical procedures on vascular malformations and vascular tumors would seem to be possible in the not-too-distant future under conditions of safe, profound hypothermia. Newer and better methods to treat obstruction to spinal fluid circulation must be devised. Neurosurgical measures in the treatment of involuntary tremor, spasms, and convulsive seizures seem certain to improve with further refinement of electrophysiological and stereotoxic methods. Understanding of neuroendocrine mechanisms will undoubtedly be improved by work in both the laboratory and in the clinic.

OPERATIONS

The following tabulations reflect the activities of the Neurosurgical Service in the past year:

ADMISSIONS—517

| | |
|----------------------|-----|
| Congenital Anomalies | 193 |
| Infections | 24 |
| Intracranial Tumors | 50 |
| Spinal Tumors | 6 |
| Trauma | 126 |
| Miscellaneous | 118 |
| Total | 517 |

| | |
|---------|-----|
| Private | 161 |
| Staff | 356 |
| Total | 517 |

OPD VISITS—1188

| | |
|---------------------------------------|-------|
| Average number of patients per clinic | 22.84 |
|---------------------------------------|-------|

DIAGNOSTIC PROCEDURES

| | |
|--------------------------------|-----|
| Pneumoencephalograms | 53 |
| Ventriculograms | 47 |
| Myelograms | 14 |
| Arteriograms | 29 |
| Burr Holes alone | 17 |
| Burr Holes and Ventriculograms | 0 |
| PEG and Arteriograms | 10 |
| Total | 170 |

OPERATIONS—458

| | |
|---------------|---|
| Laminectomies | |
| Spinal Tumors | 7 |
| Discs: Lumbar | 0 |
| Cervical | 0 |
| Abscess | 0 |
| Pain Control | 1 |
| Total | 8 |

CRANIOTOMIES

| | |
|---------------------------------|----|
| Brain Tumors | 33 |
| Subdural Hematoma and Membranes | 17 |
| Vascular Disease | 7 |
| Abscess | 1 |
| Pain Control | 0 |
| Head Injuries | 5 |
| Epilepsy | 2 |
| Other | 0 |
| Total | 65 |

OTHER

| | |
|-------------------------------|---|
| Brain Biopsy | 2 |
| Excision | |
| Porencephalic Cyst | 2 |
| Posterior Fossa Decompression | 1 |
| Posterior Lysis of Adhesions | 5 |
| Posterior Excision of Cyst | 1 |

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| | |
|--------------------------|----|
| Posterior | |
| Exploration of V-C shunt | 1 |
| Evacuation Epidural | |
| Hematoma | 1 |
| Repair, CSF Leak | 4 |
| Exploration, only | 1 |
| Total | 18 |

DERMOID CYSTS

| | |
|-------------------------|----|
| Intracranial | 2 |
| Cranial | 8 |
| Spinal | 1 |
| Total | 11 |
| Cranioplasties | 2 |
| Craniectomies | 30 |
| Meningoceles | 11 |
| Encephaloceles | 0 |
| Skull Fractures | 11 |
| Peripheral Nerve Suture | 4 |
| Other Peripheral | |
| Nerve Surgery | 5 |
| Total | 63 |

SHUNTS

| | |
|------------------------|-----|
| Ventriculo-cervical | 0 |
| Ventriculo-ureteral | 6 |
| Ventriculo-peritoneal | 2 |
| Lumbar-ureteral | 5 |
| Lumbar-peritoneal | 0 |
| Insertion of CSF Valve | |
| (V-J shunt) | 34 |
| Subdural-peritoneal | 1 |
| Torkildsen Procedure | 0 |
| Revision or removal | |
| of shunt | 54 |
| Total | 102 |

MISCELLANEOUS

| | |
|------------------------------|---|
| Repair, pseudo-meningocele | 2 |
| Repair, CSF Leak | 1 |
| Carotid Artery Exploration | 1 |
| Debridement and Partial | |
| Craniotomy, Osteo | 1 |
| Excisio, hamangioma of scalp | 1 |
| Excision, hairy nevus | 2 |
| Carotid perfusion | 1 |
| Secondary wound closure | 5 |
| Removal, varix of scalp | 1 |
| Excision, A-V malformation | 1 |

| | |
|--------------------------------|----|
| Radical excision tumor, eye | 1 |
| Excision, tumor of forehead | 1 |
| Repair, surgical skull defect | 1 |
| Biopsy, dura and frontal sinus | 1 |
| Skin graft, upper eyelid | 1 |
| Total | 21 |

STAFF ACTIVITIES

Dr. Robert W. Schick, who became Chief Resident of the combined Children's Hospital Medical Center-Peter Bent Brigham Hospital Neurosurgical Service on July 1, 1959, left the Center on December 31, 1960, to begin practice in New York City with staff appointments at St. Luke's and Bellevue Hospitals and the Neurosurgical Department of Cornell Medical School. Dr. John T. Garner, who had been Assistant Resident in Neurological Surgery since September 1, 1959, moved up to Chief Resident on January 1, 1961.

On July 1, 1960, a third resident, Dr. Francis X. Rockett, was added to the Neurosurgical Service. He is a graduate of Harvard Medical School, with previous training in surgery at Boston City Hospital and two years of service in the Navy.

It is now planned that each career neurosurgical trainee will remain three years on the combined Children's Hospital Medical Center-Peter Bent Brigham Hospital Neurosurgical Service, serving successively as Junior, Senior and Chief Resident. During the first year the Resident's work will be primarily in immediate supervision of the large neurosurgical ward at The Children's Hospital Medical Center with help in coverage of procedures and clinics at the Peter Bent Brigham Hospital and participation in all the various teaching exercises and conferences. In the second year the Resident will advance in responsibilities in both hospitals and will cover the Peter Bent Brigham Hospital surgical house offi-

cer rotating through the Neurosurgical Service.

On June 30, 1960, Dr. James T. Robertson finished a year as Clinical Fellow in Neurosurgery and entered the Air Force. He is now Assistant Chief of Neurosurgery at Travis Air Force Base, California. During the year Dr. Robertson read papers at the American Academy of Neurology and the New England Neurosurgical Society, and collaborated on reports published in the *Journal of Neurosurgery and Pediatrics*.

Dr. Nurhan Avman, one of the Research Fellows during the past year, has returned to Ankara, Turkey, to head the Department of Neurosurgery at the University of Ankara.

Dr. Matson has continued as Secretary of the American Board of Neurological Surgery. He was also a member of the ad hoc committee of the National Institute of Neurological Diseases and Blindness to consider policy regarding training grants in the field of neurosurgery and has subsequently been appointed to the Advisory Committee of the National Institute of Neurological Diseases and Blindness for a four-year period.

PAPERS PRESENTED AT
NATIONAL SOCIETY MEETINGS

American Academy of Neurology, Miami Beach, Fla.
American Academy of Neurological Surgery, Pebble Beach, Cal.
American College of Surgeons, Atlantic City, N. J.
American Academy of Pediatrics, Chicago, Ill.
American Surgical Association, White Sulphur Springs, Va.
American Neurological Association, Boston, Mass.
Harvey Cushing Society, San Francisco, Cal.

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Protein Foundation, Cambridge, Mass.
Scandinavian Neurosurgical Society,
Lund, Sweden.

Post-Graduate Teaching Programs participated in:

New Orleans Graduate Medical Assembly
Mid-South Post-Graduate Assembly,
Memphis
Houston Neurological Society
12th Annual Pediatric Institute for the
General Practitioner, Portland, Me.

Other Meetings Attended:

Congress of Neurological Surgeons,
Miami, Fla.
Neurosurgical Society of America,
Pebble Beach, Cal.
Society of Neurological Surgeons,
Seattle, Wash.
American Pediatric Society, Swamp-
scott, Mass.

NEUROSURGICAL RESEARCH LABORATORY

In this first full year since the renovation of the Neurosurgical Research Laboratory there has been a considerable increase in activity, although much of the equipment had to be installed and the interior work completed in the early months.

The work of the laboratory has centered on two main projects: a continuing one on the physiology of cerebrospinal fluid and the other on hypothermia, physiology of the body under lowered body temperatures. In addition, a project on the pressure in the cerebral circulation, based on a model of the blood vessels, was carried out.

The use of urea in conjunction with hypothermia was extensively studied during the year. This work was carried out in dogs over a tem-

perature range of 37°-24°C, and hypertonic urea solutions were given to the cooled animals. Studies were made of the elimination of urea from the body, the mixing of urea with the cerebrospinal fluid, the exchange of osmotic equilibrium between the blood cerebrospinal fluid, the urinary output, and changes which occurred in the electrolyte composition of the blood and the cerebrospinal fluid following the injection. It was demonstrated that the pressure changes effected by the urea depended upon the osmotic pressure gradient between the serum and cerebrospinal fluid, and this was independent of any urinary output. The return of the serum osmotic pressure to normal at normal temperatures was a function of the elimination of urea by kidneys, but when the body temperature was lowered below 30°C, this return to normal was accomplished by the elimination of salt as well. This is an extremely important observation. When this procedure is used in the clinic, great attention must be paid or serious conditions of low salt are likely to result. It was also determined that a smaller dose of urea was required to achieve the same effect at low body temperature.

During the latter part of the year, attention was devoted to work on deep hypothermia and hypothermia combined with extracorporeal circulation. This work was designed to explore temperatures below 20°C and as yet has not produced enough data to warrant a report.

Conclusive results in hypothermia also have been obtained in definite studies demonstrating that the metabolism of the brain is not a linear function of temperature, and that oxygen is used by the brain at all temperatures.

Studies on the cerebrospinal fluid were centered on the production of

cerebrospinal fluid in the dehydrated state. This has long been known to be a condition in which intracranial pressure was decreased and cerebrospinal fluid was produced at decreased rates. It was felt that the study possibly would yield detailed information on the minimum quantities of cerebrospinal fluid produced and the events associated with it. This work, carried out on dogs, demonstrated that in the dehydrated state the critical and controlling factor in the production of cerebrospinal fluid was the arterial blood pressure, and that there is a direct relationship between the arterial blood pressure and the cerebrospinal fluid production. This observation has suggested that there is a minimum amount of cerebrospinal fluid which will be produced by the hydrostatic forces of the cerebral blood flow, and it is this minimum which must be removed in order to prevent hydrocephalus from developing. It further demonstrated that there was no relationship between cerebral metabolism and cerebrospinal fluid production in the dehydrated state, which is in contrast to the normal animal, whether it be hydrocephalic or not.

Other experiments on the osmotic pressure of the cerebrospinal fluid show that the old concept of the total osmotic pressure of the cerebrospinal fluid being equal to that of the serum is probably wrong and that the cerebrospinal fluid is probably higher than the arterial blood by several millimoles with the cerebral venous blood somewhere in between. This finding has been confirmed from studies on the intracranial pressure changes which seem to be a function of osmotic pressure. It has been found that the zero pressure change occurs when the cerebrospinal fluid is slightly above that of the blood.

All these experiments, combined

with those of the previous years, are being synthesized into a general description of the cerebrospinal fluid formation which suggests that there are two important physical factors involved in the bulk and formation of cerebrospinal fluid: filtration by the blood and a movement of fluid secondary to osmotic pressure changes. Superimposed on these are the metabolic processes continually in action which function to keep the cerebrospinal fluid pressure composition constant.

The other major project of the year was the construction of a model of the Circle of Willis and the arteries leading to it, using plastic tubing. The size and length of the various vessels were taken from the standard anatomical texts, and a Sigmamotor pump was used to pump blood or fluid through the system. The peripheral vessels were given an added resistance so that the blood flow and pressure through the system was consistent with that of a normal adult. Various vessels were occluded and pressure measurements made beyond them and in the Circle of Willis to show the effects of these occlusions. Particularly important were the observations made on the vertebral arteries where very few have been made clinically. This work demonstrated that before occlusion of a vertebral artery is carried out in the clinic, bilateral angiograms should be made in order to decide which vessel should be occluded.

In another series of experiments in the realm of hypothermia it was shown that while occlusion of the total circulation of the brain can only be tolerated for 15 minutes, the middle cerebral artery could be occluded for as long as 45 minutes if the body temperature was at 25°C. This finding is similar to results at normal temperature where the middle cerebral artery can be occluded for periods

slightly longer than the total brain can withstand circulatory arrest. The reasons for this are not clear, but it was suggested that the small amount of circulation through the collaterals tends to remove metabolic products, possible CO₂ which allows a longer period of survival.

Franc D. Ingraham, M.D.
Neurosurgeon-in-Chief

Bibliography

- Bering, E. A., Jr., Cerebral spinal fluid production and its relationship to cerebral metabolism and cerebral blood flow. *Am. J. Physiol.*, 197: 825, 1959.
- , Preliminary studies of the temperature coefficient of blood clotting. *Vox Sanguinis*, 5:82, 1960.
- Crofton, F. D. L., and Matson, D. D., Roentgenological study of choroid plexus papillomas in childhood. *Am. J. Roent., Rad. Therapy & Nuclear Med.*, 83:479, 1960.
- Ingraham, F. D., and Bailey, O. T., Cystic teratomas and teratoid tumors of the central nervous system in infancy and childhood, Part II. *J. Neurosurg.* (In press.)
- Ingraham, F. D., and Matson, D. D., Tumors of the central nervous system. In *Cancer and Allied Diseases of Infancy and Childhood*. Little Brown, 1960.
- Jessiman, A. G., Matson, D. D., and Moore, F. D., Hypophysectomy in the treatment of breast cancer. *N. E. J. Med.* 261:1199, 1959.
- Matson, D. D., Comparison of biological behavior of intracranial tumors of children and adults. *Trans. Am. Neurol. Assoc.*, 1960. (In press.)
- , Congenital anomalies of the nervous system. In Davis, L. (Ed.), *Christopher's Textbook of Surgery*, 7th ed. Saunders, 1960.
- , The management of acute compound battle-incurred injuries of the spinal cord. In *Surgery in World War II, Neurosurgery*, Vol. 2. Office of the Surgeon General, Department of the Army, 1959.
- , Surgical treatment of congenital anomalies of the coronal and metopic sutures. *J. Neurosurg.*, 17: 413, 1960.
- and Crigler, J. F., Radical

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

- treatment of craniopharyngioma. *Ann. Surg.* (In press.)
- Matson, D. D., and Crofton, F. D. L., Papilloma of the choroid plexus in childhood. *J. Neurosurg.* (In press.)
- Matson, D. D., and Robertson, J. T., Therapeutic agents for reduction of intracranial pressure. *Pediatrics*, 25: 73, 1960.
- Robertson, J. T., Schick, R. W., Morgan, F., and Matson, D. D., Accurate placement of ventriculo-atrial shunt for hydrocephalus under electrocardiographic control. *J. Neurosurg.* (In press.)
- Selenkow, H. A., Tyler, H. R., Matson, D. D., and Nelson, D. H., Hypopituitarism due to hypothalamic sarcoidosis. *Am. J. Med. Sci.*, 238: 456, 1959.
- Shillito, J., Jr., Indications for surgery in cerebrovascular accidents. *P. G. Med.* (In press.)
- Uzman, L. L., Bering, E. A., Jr., and Morris, C. E., Neuraminic acid content of cerebrospinal fluid as affected by neurological diseases. *J. Clin. Invest.*, 38:1756, 1959.

DEPARTMENT OF PSYCHIATRY

REPORT OF PSYCHIATRIST-IN-CHIEF

INTRODUCTION

Although this report was limited originally to review of the structure, functions, and needs of the Child Psychiatry Department of The Children's Hospital, it soon became apparent that such an approach would give a rather circumscribed and narrow view of the treatment, training, and research activities relative to child mental health that are established and expanding in the Medical Center as a whole. The coordination of these activities in the Department proper with the allied or parallel activities going on in (a) the affiliated Judge Baker Guidance Center, plus the teaching programs in association with (b) the Harvard Medical School Department of Psychiatry (Child Psychiatry Division); (c) the Harvard University Department of Social Relations; and, (d) the Graduate School of Education, seemed to indicate that only a general summary would be informative and interesting to the Trustees and others concerned about the mental health of children.

Therefore, although the intent to give to the Trustees a definitive report of the mental health activities in progress in the smaller unit (the Department of Psychiatry of the Hospital) is retained, we have attempted to present an overview of integrated and coordinated professional structures and functions. Depending on the context, we shall refer at times to (a) the Hospital "Department of Psychiatry" or (b) the "Judge Baker-Children's Hospital" Division, the latter referring in the main to our joint activities in association with various Schools and Departments of Harvard University.

DEPARTMENTAL STRUCTURE AND BASIC SERVICE FUNCTIONS

The professional personnel of the Department include three disciplines

traditionally involved in child psychiatric clinic treatment in America: child psychiatrists, clinical psychologists, and psychiatric social workers.

In this report-year (July 1959 through June 1960), we have had a total of fifteen staff psychiatrists working in the Department, but it is important to note that not one of them is full-time; seven are half-time appointees, and the remaining eight work only four to sixteen hours per week. The inability to appoint psychiatrists to full-time status is, of course, due to the fact that we lack the financial resources.* These physicians value highly their hospital and clinic association because of the opportunities to teach and to do research, but it is necessary for them to make their livelihood in private practice.

There are eight clinical psychologists in the Psychiatry Department, seven on full time. There also are eight staff psychiatric social workers, six on full time, one is on half time, and one on quarter time.

The basic structure for the professional functions of the Department consists of the Central Psychiatry Clinic, assigned personnel to the Medical Out-Patient and specialty clinics, assigned personnel on call in the various in-patient wards of the Hospital, personnel assigned to the Good Samaritan, the Children's Mission, the Children's Cancer Research Foundation, the Center for Blind Babies, the Well Child and Family Care Programs of the Department of Medicine, and the Adolescent Unit.

The Central Psychiatry unit of the Department is housed on the third floor of Building A, and the renovated

* The expenditures for salaries of Psychiatrists and for those in the other disciplines within the Department, together with a statement of the source of these monies, are given in Appendix B of this report.

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building at 328 Longwood Avenue. It has two important functions. In the first place, it has for its personnel people highly trained in child psychiatry, psychiatric social work, and clinical psychology who can carry out intensive long-term treatment of children referred from the various clinics and wards through the Hospital. It also is the nucleus of the whole Department in that various psychiatric "teams" are assigned from it to work within the other clinics throughout the Hospital. A notable example is the assignment of psychiatrists, social workers, and clinical psychologists to the Adolescent Unit. These teams carry out treatment within these clinics and aid in the training and teaching of personnel.

From the Central Clinic *research* teams are organized to carry out research projects in the Department or in conjunction with personnel in other Departments of the Hospital.

In short, the Central Clinic is the Department of Psychiatry's main base of operation, and its personnel have overall supervision of its own treatment, training and research functions and such functions carried out by assignment to other services.

The personnel assigned to the Medical Out-Patient Division of the Hospital are housed on the second floor of Building A, across the stairwell from the Medical Out-Patient Department, a convenient situation in the joint activities of the psychiatrists and psychologists with the pediatrician, pediatric residents, and medical students.

To each of the in-patient wards and to the seven other areas listed above are assigned psychiatrists and psychologists who take part in psychiatric consultations and psychological evaluations of patients at the request of the staff or resident physicians

in these several areas. The personnel of some of these medical and surgical areas call upon us frequently for services, some infrequently and some not at all. Nonetheless, psychiatric teams are assigned specific areas of coverage throughout the Children's Hospital Medical Center and respond to all requests received.

A statistical summary of the hours and sessions spent and the individual patients seen in (a) intensive psychiatric treatment; (b) diagnostic and (c) consultation services for 1959-60 appears in the table below.

In reviewing these figures it is well to bear in mind that much more clinic time of various personnel is required in mental health appraisals or diagnoses (and certainly in psychiatric treatment!) than usually is the case in other medical or surgical specialties. In the mental health field both the

child and the mother (plus usually the father in more recent years) must be seen separately, in interview sessions lasting one hour. Even a diagnostic work-up takes a good many more hours than one per patient. All these needed hours and careful evaluation cost society (and hospitals) a great deal of money, but in the light of our present body of knowledge and our present accepted clinical procedures, mental health work with children must be carried out this way, and particularly so in a hospital that is world renowned for its diagnostic, treatment, training and research facilities.

Education, training, and research

The education, training, and research functions of the Department must be viewed in the light of the integrated efforts of the Hospital Department of Psychiatry and the Judge Baker Guid-

SERVICE STATISTICS

July 1, 1959 - June 30, 1960

| | |
|-------------------------------------|-------|
| Therapy sessions with patients | 3,814 |
| Interviews with parents of patients | 3,332 |

PSYCHOLOGICAL EVALUATIONS:

(separate visits by patients, *not* hours)

| | |
|---------------------------------------|-----|
| MOPD | |
| patients | 616 |
| Wards | |
| patients | 278 |
| Adolescent Unit | |
| patients | 200 |
| House of Good Samaritan | |
| patients | 3 |
| Seizure Unit | |
| patients | 2 |
| Out-Patients (on a private fee level) | |
| patients | 109 |
| Psychiatry Clinic | |
| patients | 37 |
| Private In-Patients | |
| patients | 48 |

DIAGNOSTIC CONSULTATIONS:

MOPD

| | |
|----------|-----|
| patients | 585 |
| parents | 563 |

| | |
|-----------------|----|
| Adolescent Unit | |
| patients | 34 |
| parents | 15 |

| | |
|--------------|----|
| Seizure Unit | |
| patients | 20 |
| parents | 15 |

| | |
|----------|-----|
| Ward | |
| patients | 131 |

| | |
|-------------------------|---|
| House of Good Samaritan | |
| patients | 9 |

| | |
|-----------|----|
| Endocrine | |
| patients | 25 |

| | |
|--|-------|
| Total patients referred to the Psychiatry Department for evaluations | 1,917 |
|--|-------|

| | |
|--|-----|
| Average number of children seen in therapy during current year | 202 |
|--|-----|

| | |
|--|-----|
| Average case load in intensive treatment at any one time | 140 |
|--|-----|

DEPARTMENT OF PSYCHIATRY

ance Center. In their integrated segments they, in turn, relate to the activities of the Department of Psychiatry of the Harvard Medical School since in combination the two units are now considered a Division of this medical school faculty group.

The Judge Baker Guidance Center is the second oldest child psychiatry clinic in America and, due to the scientific work and writings of its first Director, Dr. William Healy, has attained a gratifying national and international reputation during its nearly half century of work. However, the Center, like most traditional child guidance units, was established and had developed somewhat outside the main stream of medicine (and, indeed, of general adult psychiatry). A decade or more ago it became apparent to leaders in the field of child psychia-

try that this separation from medicine, particularly from pediatrics, was not promoting mental health of children either through psychiatry or through pediatric care. The trustees and the staff of the Judge Baker were among the first to recognize the need for a rapprochement between these two fields and, as a practical matter, the need for joint, or adjacent, facilities to make coordination of the medical and non-medical disciplines effective.

The Judge Baker had a decade ago—and still has—120 staff, resident-in-training and graduate student personnel, four or five times more than in the Hospital Department of Psychiatry. It is of importance to note that the Judge Baker has an invested endowment of approximately \$4,000,000, whereas the hospital department has none definitely earmarked for use in

psychiatry. Nonetheless, in spite of these marked differences in numbers of personnel and resources, it was felt that if the Judge Baker were to carry out correctly its existent and future programs in the interest of child mental health, the unit needed the obvious values accruing in a meaningful affiliation with the Children's Medical Center.

In the fall of 1953 the Judge Baker Child Guidance Center became an affiliate of the Children's Medical Center, and coordination of the activities of the Judge Baker and the newly established Hospital Department of Psychiatry was begun. This coordination is still in progress. In 1957 the Judge Baker occupied its new building on Longwood Avenue, directly opposite The Children's Hospital. This new building contains facilities for the traditional out-patient child guidance work of the Judge Baker, plus facilities for two units for additional and new functions.

First in importance was an in-patient service, a unit that opened in September of 1958. This unit is a twenty-six bed in-patient service which gives psychiatric care and education to children who need to be treated away from their own homes.

During 1959-60 there was an average of seventeen in-patient children on these two wards, and at the time of this report there are twenty-two. Needless to say, this in-patient psychiatric section has added new opportunities for research and training, and the staff and students of the hospital unit participate in its operation or receive training there.

The second new division, the Manville School, took its first patient in October 1957, and in the year 1959-60 had thirteen pupils. This unit, which is essentially a psychiatric day care program, has proved its worth

FINANCIAL SHEET OF EXPENDITURES AND INCOME FOR PERSONNEL ONLY

July 1, 1959 - June 30, 1960

| Expenditures | | Income from outside sources (USPHS; Commonwealth Fund; Hood Foundation; other) |
|----------------------------|---------------------|--|
| Psychiatrists | \$55,152.00 | \$38,672.00 |
| Psychologists | 52,892.00 | 18,660.00 |
| Psychiatric Social Workers | 32,278.00 | 11,483.00 |
| Secretaries | 17,612.00 | 4,610.00 |
| | <u>\$157,934.00</u> | <u>\$73,425.00</u> |

This report is restricted to *Personnel only*.

In addition to these grants for staff personnel, the Department received 24,000 to train Residents in Psychiatry and Clinical Psychology, all of whom contribute *service* to the hospital and its various clinics. Also *not* included in the above income are fees from clinic patients or patients from any of the outside units served by the Department. Important also is the fact

that these figures do not reflect other income received by the hospital through this Department; viz, Overhead, Social Security, and Retirement.

It is of importance to note that the personnel costs to the Hospital are *not* primarily in the medical discipline of psychiatry but rather in the allied non-medical discipline of the "psychiatric team," namely, Psychology and Psychiatric Social Work.

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as a treatment and training center.

The professional staff functions of both the Judge Baker and the Children's Hospital Department follow in most essential details the team work structure of the traditional child psychiatry clinic. The psychiatric team is usually composed of a psychiatrist, psychiatric social worker, and a clinical psychologist. In most instances the psychiatrist treats the child while the mother meets with a trained social worker. The traditional function of the clinical psychologist was diagnosis and research, but in recent years these roles have been expanded. The clinical psychologist now does counseling under psychiatric supervision in these medical settings. In the Judge Baker-Children's Hospital Division of the Medical School Department of Psychiatry, there are at present approximately 150 professionally trained people, most of whom are allied with one of the three professions mentioned above. However, in the last three years there have been added to these categories people trained in (and for education in) education, sociology, and in anthropology.

In commenting upon the functions of this Division of Child Psychiatry in respect to education, training and research I will emphasize the coordinated relationships which we have established with

1. The Harvard Medical School
2. The Harvard Department of Social Relations at the graduate level
3. The Harvard Graduate School of Education
4. The undergraduate instruction in Harvard College and Radcliffe College
5. The Harvard School of Public Health.

I also will emphasize the present and future relationships of this Divi-

sion with the following Medical School departments:

1. The Department of General and Adult Psychiatry
2. The Department of Pediatrics
3. The Division of Child Neurology.

CHILD MENTAL HEALTH EDUCATION FUNCTIONS

Medical School Education

First Year. The members of this Division at the Judge Baker and The Children's Hospital offer lectures and clinics in that segment of the new curriculum entitled Growth and Development. These lectures, with illustrative clinical material, stress normal personality growth in children. The various tasks in personality development set for the child are outlined, together with the crises and threats that may block or divert the normal process of maturing.

Second Year. In association with the Department of Pediatrics, lectures are given to the second year medical students which include the differential diagnosis of various types and grades of mental retardation, childhood schizophrenia, and emotionally determined learning blocks.

Third Year. To the third year medical students, six lectures are given on the most frequently encountered childhood neuroses and psychoses.

Fourth Year. In association with the Department of Pediatrics of The Children's Hospital, there are (1) weekly clinical exercises on the responses of children to the effects of hospitalization, and (2) a two-hour session held with the fourth-year students at the Massachusetts Mental Health Center, dealing with the problems of adolescents.

In addition, the members of the Psychiatry Department take part in the clinical education of the Harvard Medical School students: There are

weekly two-hour teaching conferences at the hospital and at the Judge Baker. In association with the Division of Pediatrics at the Hospital, the department supervises psychiatric teaching of fourth-year medical students in the Well Child Clinic and Family Health Care program; this program is in the Family Health Services. There is a month's elective course in child psychiatry offered at the hospital to the fourth-year medical students. In this course the students interview both child patients and their parents and take part in the psychiatric consultations of staff members with patients on the wards. They also attend teaching conferences and the research conferences at The Children's Hospital and at the Judge Baker across the street.

Department of Social Relations (Graduate Level)

Since the establishment of the Department of Social Relations in the University in 1946, the Judge Baker has been used as a field training unit for the clinical psychologists following the curriculum in that department. These teaching functions have been carried out at The Children's Hospital as well. In the past academic year six students at the second year graduate level have been assigned to the Judge Baker-Children's Hospital Division for an internship in clinical psychology throughout the academic year.

There are two-hour graduate seminars (Social Relations 296A and 296B given at the Judge Baker each week throughout both the Fall and Spring terms). The second-year graduate students in the Division of Clinical Psychology of the Department of Social Relations are required to take this seminar. These seminars include the orientation of the student in clinic practices and offer instruction in the

diagnosis and counseling of child patients and their parents.

Harvard Graduate School of Education

Beginning with the fall term 1957, Dr. Samuel Waldfogel, formerly the Director of Research at the Judge Baker, was appointed a Lecturer on the faculty of the School of Education. At the present time, he spends one half of his time in course work on the other side of the Charles River and one half of his time with us at the Judge Baker and the Hospital, as the supervisor of graduate students from that school.

Dr. Waldfogel and Professor Tiedemann of the School of Education began their first clinical course for the training of educational psychologists in clinical practices in the Fall of 1957. They set up field training units both at the Judge Baker and in the Newton School Counseling Unit, the latter under the direction of Dr. Edward Landy.

During the past year, two of the students of the School of Education received Tinkham Fellowships from the Judge Baker, and two students of the School of Education received Manville Fellowships from the foundation's grant given to the School of Education.

In the Spring term eight students from the Graduate School of Education were admitted to Dr. Gardner's middle Group Course, Social Relations 187 (The Emotional Problems of Childhood and Adolescents).

For the next academic year (1960-61) Dr. Edleff Schwaab of our staff will also hold an appointment as a Lecturer in the School of Education.

Instruction of Undergraduates in Harvard College and Radcliffe College

Two courses to which undergrad-

uates are admitted are given in the Department of Social Relations: Social Relations 187 in the Spring term, taken by approximately fifty undergraduates, and during the Fall term, Social Relations 131, dealing with the "Social and Psychological Aspects of the Practices of Medicine" and given by Dr. Gardner and Dr. Croog, an anthropologist who holds a joint appointment in the Department of Social Relations and at the Hospital. This course is offered to pre-medical students and to seniors concentrating in Social Relations. During the fall term there were fifty to sixty students taking this course. Other members of the Hospital staff, besides those in the Psychiatry Department, assist in offering this sequence of lectures on medical care and the meaning of disease to the patient.

GRADUATE TRAINING PROGRAM

I would like to turn now to post-doctoral residency training in child psychiatry as carried out by the Judge Baker-Children's Hospital Division in Child Psychiatry. The entire child psychiatry division of the Department of Psychiatry at the Medical School comprises the largest residency training program in child psychiatry in the country. Training in this area began at the Judge Baker in the 1930's, and it has been due largely to affiliation with the Medical School that the division has grown to its present size. With Dr. George Berry's help and guidance, we now have seven fully approved and fully accredited training clinics in child psychiatry, including The Children's Hospital and the Judge Baker. All these clinics have residency training. Some of them train medical students and non-medical pre- and post-doctoral fellows; and all are engaged in research in child psychiatry.

In the Judge Baker-Children's Hos-

pital coordinated training program in child psychiatry, we have had fourteen full-time residents in training during the academic year 1959-1960. These men and women work on both sides of Longwood Avenue and study a variety of childhood emotional disorders with close supervision of the psychotherapy. In addition, they follow the course of didactic exercises which have been set up for the Harvard Training Program in Child Psychiatry and which all residents of the clinics in the Harvard orbit are required to attend.

In addition to the residents mentioned above, we have residents from the programs of training in general psychiatry at the Massachusetts Mental Health Center and the Boston State Hospital; they come to the division for orientation in child psychiatry but do not intend to become specialists in this field.

Lectures also are given to pediatric residents at The Children's Hospital. There is on-the-job training of pediatric residents in the various outpatient clinic areas in the hospital.

On Friday mornings throughout the year, the residents on the Medical Out-Patient Department present cases for discussion to the Psychiatrist-in-Chief.

The Department of Psychiatry furnishes the Child Health Program with four hours of consultation per week and these consultation hours also are devoted in large part to the instruction of both pediatric residents and medical students. Two hours are spent interviewing mothers before a one-way mirror as a teaching device for the demonstration of interview technique. Two hours are devoted to participation in teaching discussions with the staff of the program and the third year Harvard Medical Students. The psychiatric implications of child

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rearing practices, the dynamics of family interactions, and normal growth and development are discussed.

In addition, we furnish periodic consultations on specific cases for which the staff requests assistance. We participate in the occasional policy meetings on the teaching aspects of the program.

Finally, weekly instruction is offered by members of the Department through the psychiatrist assigned to the Family Health Care Program of the Hospital.

The most important part of the work is not to teach psychodynamics or the theory of psychopathology, but to contribute from psychiatric experience and personality theory pertinent information for understanding "normal" family interactions, the psychological reactions to medical illness, the significance of the doctor-patient relationship, and the psycho-social aspects of medical practice. These items have been dealt with as they came up in the course of case discussions or when a student requested a consultation about a particular family. The general problems that students might encounter in their roles as new doctors have been discussed without mixing into their private affairs gratuitously.

An additional function is to discuss with the physicians and students the genesis and management of psychiatric disorders in their patients as these arise in the course of the year. Whenever possible, direct diagnostic or therapeutic contact with the patients has been avoided, the students and trainees manage the necessary supportive therapy when feasible and otherwise supervise the referrals for definitive psychiatric treatment with the help of the Social Worker, Mrs. Brenner.

It is important to add that selected staff members and students from the

Children's Mission to Children are present at these exercises.

Training in the Social Sciences

During the past year we have had four post-doctoral students in training in clinical psychology in the Judge Baker-Children's Hospital unit.

Five years ago the Judge Baker received a training grant from the United States Public Health Service to establish a model training program for personnel to work in the field of juvenile delinquency. This grant was for \$100,000 per year for five years and it is in its write-up stage. The various installations organized for the training of students (both physicians and non-medical personnel) are the Judge Baker Guidance Center, units at the Boston Juvenile Court and the Cambridge Court, and the Newton School Counseling Center. This course in 1959-60 included clinical training in these various installations plus lectures and seminars. Enrolled at the moment are child psychiatrists, students from the Harvard Graduate School of Education, students from the Department of Social Relations, men from the Divinity School, and students from the law school.

During the academic year, 1957-58, the Medical School, in conjunction with the School of Public Health, and the Department of Social Relations, established a training program for social scientists in the medical field. These three divisions of the University organized this program with the help of a five-year grant from the United States Public Health Service. The Division of Child Psychiatry, like the various divisions of the department of general psychiatry, takes part in the instruction of these men and women who wish to apply social science methods to the study of problems of health.

RESEARCH

In the year 1959-60, the Judge Baker and Children's Hospital psychiatric and social science personnel took part in a coordinated program of research on the following aspects of normal and abnormal child development: Anorexia nervosa, school phobias, seizures, juvenile delinquency, childhood schizophrenia, the effects of congenital defects upon personality development, impairment of the learning process in normal children, basic studies in patterns of child personality development.

Much of this research concerns the problem of aggression and counter-aggression in children. We hope to throw light on the expression of this instinct and control of it. These programs are carried out under grants from the United States Public Health Service, the Hood Foundation, and from the Scottish Rite Foundation for Research in Dementia Praecox.

Dr. Peter Wolff, a United States Public Health Service Career Investigator, is carrying out research studies on babies in the first twenty-four hours of life.

Dr. Sidney Croog, an anthropologist, is concluding a study of The Children's Hospital and its allied units as a community child health center. Dr. Croog is a Research Fellow of the Russell Sage Foundation.

Dr. Eric Lennenberg, a United States Public Health Service Career Investigator, in 1959 began his work on speech development and speech pathology, his aim being to study the development of speech and language from physiological, neurological, and psychological viewpoints. This research may lead to new diagnostic tools in the examination of children with abnormal speech behavior; may give new insights for the management of speech and language disability, and, most important of all, may provide new data

concerning the biological prerequisites of speech development in the human infant. Dr. Lennenberg's research grant is for five years.

Dr. Geraldine Rickard and Dr. Haskel Cohen, through Funds from the Hood Foundation and the Wolbach Fund, are developing a psychological test to determine children's progress in emotional development. The aim is to perceive basic patterns in relation to the selected tasks of emotional development. With such information on norms psychiatric personnel would be better equipped to determine the areas in which emotional problems exist.

FUTURE NEEDS AND ITEMS FOR DISCUSSION

In the foregoing survey I have outlined the treatment, training and research activities and programs of the Department of Psychiatry of The Children's Hospital Medical Center in the year July 1959 to July 1960. I have stressed those activities and work of the Department's personnel in the hospital proper and have included the coordinated work with the affiliated Judge Baker Guidance Center. In conclusion, I would like to list needed new programs or needed expansion of existing programs that would add to our effectiveness in dealing with the mental health problems and behavioral deviation of children. I say "list" advisedly because almost all of these items require the careful consideration of the Board (or Boards) of Trustees and the Chiefs of various services of the Hospital (and the Judge Baker) before definite detailed outlines and proposals are blueprinted—and surely before cost and space requirements are defined.

It is well to bear in mind, too, that in the past psychiatric programs to be carried out for either children or adults

in a general hospital have had to evolve slowly and the need for them has had to be pressing to—and to be pressed by—the personnel in departments other than Psychiatry itself. For example, although all medical personnel may readily see the need for a new ophthalmological or nutrition division, or for an extension of a post-natal care program, the needs for this or that new program in the new field of child mental health are not so easily demonstrated or accepted. Child psychiatric care and prevention programs are usually expensive affairs. These repeatedly demonstrated facts should be known and appreciated by trustees—and most important of all, they should be known, appreciated, and understood by the *psychiatrist* who may be urging new or expanded programs.

With these reservations in mind, I suggest a consideration of the following items (listed not necessarily in the order of their importance) in respect to future programs relevant to the mental health care of children at The Children's Hospital Medical Center:

1. There is the need for a modest number of beds in The Children's Hospital with proper facilities for the care of child psychiatric emergency cases that are from time to time brought to our out-patient or emergency clinics, or that develop in the hospital on one or another medical or surgical services. Although we have twenty-six beds on the in-patient service at the Judge Baker, we are not equipped either by ward structure or personnel to handle the youngster who presents an acute behavioral emergency.

2. We definitely need expansion of the psychiatric treatment and research facilities to include the infant and pre-school child, psychological testing programs, and, especially, programs of *training* for clinical psychol-

ogists who may, we hope, become specialists with this particular age group.

3. There is a need to include mental health principles and mental health personnel in the recreational and educational programs for in-bed and convalescent patients. I am referring here specifically to the already nationally recognized programs that are being carried out at the Floating Hospital under Dr. Tisza, and at the Boston City Hospital under Dr. Gellis.

4. With the contemplated establishment of a new Department of Neurology it is hoped that cooperative schemes of training, treatment, and research will go forward. It seems to me that with an expanded and definitive Department the widest spectrum of cases of both the organic neurological and the emotional-behavioral type could be cared for within our own Children's Hospital Medical Center. It presents an opportunity for a broad and eclectic treatment program, and for a training and research approach to these disabilities of childhood.

5. The possibilities for the appointment of one or two full-time psychiatrists to our staff should be explored seriously. In the Department of Psychiatry—as in some of the other departments of the Hospital—the lack of outstanding "personnel in depth" constitutes, to my mind, a serious situation, in the evolvement of future treatment and research programs and in the maintenance of a Harvard teaching program of high quality.

6. I have already presented to the Chiefs of Staff and to the Director of Development of the Hospital the hope that monies may be found for the establishment by Harvard Medical School of a professional chair in child psychiatry at The Children's Hospital. It seems to me that The Children's

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Hospital is the logical and sensible place for such a chair.

7. To turn to present-day needs for a moment, I recall writing to the administration in 1954 a detailed outline of the pressing need in the department for (a) added support for the *treatment* facilities in the Central Psychiatry clinic and (b) a more realistic view of the psychiatrist-psychiatric social worker ratio in that clinic. Both of these needs are pressing and our work could be greatly enhanced by meeting them if this is at all possible at the present time.

8. It is our hope that through the help of Dr. Janeway we will be able to find stipends for a year's training in child psychiatry for those appreciably large numbers of board-eligible pediatricians (25 or more per year) who apply to the Department for such training. Thus far we have not been able to secure these stipends, though both Dr. Janeway and I have tried various possible sources over the past two years.

9. Finally, looking as objectively as possible at the present relationships between the Judge Baker department and The Children's Hospital Medical Center department of psychiatry, I think beginning discussions relative to the future administrative unification of these separate departments would be profitable. Such discussions, of course, should involve the Chiefs of Staff of the Hospital, Dean Berry of the Medical School, the Trustees of the Children's Hospital Medical Center, the Trustees of the Judge Baker Guidance Center, and the staffs of both the Judge Baker and the Hospital Department. Under the affiliation status the two departments, it is true, have developed over the past six years many coordinated and cooperative programs

as outlined above, and this cooperation will probably go on apace in the years immediately ahead. However, it is my feeling that preliminary exploratory discussion relative to the possible integrations of these two departments should begin.

George E. Gardner, Ph.D., M.D.
Psychiatrist-in-Chief

Bibliography

- Blitzer, J. R., Children who starve themselves. Anorexia-nervosa. *J. Psychosom. Med.* (In press.)
- Caudill, W., Observations on the cultural context of Japanese psychiatry. In Opler, M. (Ed.), *Culture and Mental Health*, Macmillan, 1959.
- , Relationship of anthropology to psychiatry in the study of culture and personality. *Jap. J. Psychoanal.*, 1959.
- , Similarities and differences in psychiatric illness and its treatment in the United States and Japan. *Mental Hygiene*, Seishin Eisei, 1959.
- Fineman, A. D., Preliminary observations on ego development in children with congenital defects of genitourinary system. *Am. J. Orthopsychiat.*, 29(1):110, 1959.
- Gardner, G. E., Adjustment difficulties during adolescence. In Stuart, H. C., and Prugh, D. G. (Eds.), *The Healthy Child: His Physical, Psychological and Social Development*. Harvard, 1960.
- , Discussion of: Rosenbaum, M., Role of psychological factors in delayed growth in adolescence. A case report. *Am. J. Orthopsychiat.*, 29:769, 1959.
- , Juvenile delinquency as a development task failure. *U. S. Public Health Service Publications*, 1959.
- , Mental retardation as part of the training program in child psychiatry. In Bowman, P. W., and Mautner, H. V. (Eds.), *Mental Retardation: Proceedings of the First International Medical Conference*. Grune & Stratton, 1960.
- , Observational research with emotionally disturbed children: Session II. Symposium, 1958. Discussion. *Am. J. Orthopsychiat.*, 29:590, 1959.
- , Psychiatric problems of ado-

- lescence. In Arieti, S. (Ed.), *American Handbook of Psychiatry*, Vol I. Basic Books, 1959.
- , The public's right to know. Symposium. *J. Nat. Prob. & Parole Assoc.*, 5:431, 1959.
- Kaufman, I., Frank, T., Heims, L., Herrick, J., and Willer, L., Four types of defense in mothers and fathers of schizophrenic children. *Am. J. Orthopsychiat.*, 29:460, 1959.
- Lenneberg, E. H., Language, evolution, and purposive behavior. In *Culture in History: Essays in Honor of Paul Radin*. Columbia, 1960.
- , Review of Penfield, W., and Roberts, L., Speech and Brain Mechanisms. *Language*: 36, No. 1, 1960.
- Makkay, E. S., Adolescent girls. In Stuart, H. E., and Prugh, D. G. (Eds.), *The Healthy Child: His Physical, Psychological and Social Development*. Harvard, 1960.
- , Meaning and use of relationship in freeing adaptive functions of the ego. *Case Studies Smith Coll. Sch. Soc. Wk.* (In press.)
- , Some problems in the differential diagnosis of pre-delinquency in early latency. *J. Am. Acad. Child. Psychiat.* (In press.)
- , Kaufman, I., and Zilbach, J. J., Impact of adolescence on girls with delinquent character formation. *Am. J. Orthopsychiat.*, 29:130, 1959.
- Waldfogel, S., Emotional crisis in a child. In Burton, A. (Ed.), *Case Studies in Counseling and Psychotherapy*. Prentice-Hall, 1959.
- , Tessman, E., and Hahn, P. B., A program for early intervention in school phobia. *Am. J. Orthopsychiat.*, 29:324, 1959.
- Wolff, P. H., Developmental psychologies of Jean Piaget and psychoanalysis. In *Psychological Issues*, Vol. II, No. 1, Mono. 5. International Universities Press, 1960.
- , Discussion of: Chambers, J., Maternal deprivation and the concept of time in children. *Am. J. Orthopsychiat.*, 31:416, 1961.
- , Observations on newborn infants. *Psychosom. Med.*, 21:110, 1959.

REPORT OF RADIOLOGIST-IN-CHIEF

When the annual statistics of the Department of Radiology are compared, it is evident that the increase in the work load of the Department is to some extent predictable. An increase approaching 10 per cent annually is to be anticipated. There has been but one exception, the year 1957. In that year there was a great deal of publicity about the hazards of radiation. Through methods of mass communication facts already known to radiologists were made public, sometimes in a distorted and exaggerated form. The reaction of fear and worry may well account for the diminution in the rate of increment during that year. In spite of an increase in the work load and the complexity of the examination, our records indicate that the number of films used per examination has presumably leveled off to the reasonable figure of approximately two and three-quarters films per examination.

It is also possible to predict in a rough way the accretion in staff needed to carry out satisfactorily the increasing load placed upon the Department. The studies that have been made suggest that one radiologist should attempt to handle no more than 10,000 cases per annum, and it is probable that in a teaching hospital this figure should be considerably lower. An increase of 2000 complicated examinations warrants one more technician and this, of course, necessitates the addition of other key personnel to maintain the smooth functioning of the Department.

During the past few years radiography as a science has entered an almost revolutionary era. With rapid advances in electronic techniques, new methods of radiological exploration are now available that are safer for the patient and diagnostically more rewarding. Image amplifiers,

television techniques and moving pictures or cinefluorography are now routine procedures in the Department. The Hospital must anticipate in the future considerable capital expenditure so that the very latest advances in these new techniques may be applied to the care of children, to research and to teaching. To cite but a single example, the present image amplifiers give over a 3000-fold light gain, enabling the radiologist to reduce the amount of x-radiation to the patient to almost one-fortieth of that given before. At the same time the image is vastly improved so that lesions barely detectable by the older modalities now become clearly evident, and can be demonstrated on television and recorded on movie film. The Hospital must not lag behind either in the application of these few facilities in the Department of Radiology or in eagerly anticipating the use of television for teaching, research and patient care in other areas of the Hospital.

The research activities of the Department continue with a number of fields of major interest. The division of Radiotherapy under Dr. Giulio J. D'Angio has been investigating Actinomycin D in combination with x-ray therapy, particularly in regard to normal tissue effects, effect on animal tumor systems and comparison with other chemotherapeutic agents. At the same time search is being continued for other radiation sensitizers, such as the nitrofurans. A third area of research is the comparison of the effects of the particulate radiation (high speed electrons) and electromagnetic radiation (x-rays) on the growing bones of rabbits. Other investigators are collaborating in these studies. Included among them are Dr. Charlotte L. Maddock of the Children's Cancer Research Foundation and Mr.

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Kenneth Wright of Massachusetts Institute of Technology.

The division of Radiotherapy also provides the technical facilities for other investigators pursuing many differing experiments. Among those using the facilities of the Department are Drs. Alfred H. Handler and Richard Adams working on the irradiation of tumor-bearing hamsters, these studies having to do with chemotherapeutic agents and in the immune mechanisms of tumor-host relationships. Dr. John F. Enders and his associates are utilizing x-ray therapy in their studies employing tissue culture techniques on leukemogenesis and virology. Dr. Carl Partanen has used x-radiation in conjunction with his studies on spontaneous tumors developing in the fern,

while Drs. Hans Meier and Maddock have worked on bone marrow transplantation in irradiated rats and Dr. David Gitlin on adrenal function of mice in relation to irradiation. These studies and others utilizing x-radiation equipment and the services of Dr. D'Angio and his staff indicate that his division has been very active indeed. Although there has been no notable change during the past three years in the number of patients treated, approximately 3,600, the very active research program has and will contribute a great deal toward the understanding of a number of important problems.

Mr. Eric Hammond, the Technical Assistant to the Department of Radiology, has done significant re-

search in methodology and in the engineering of new equipment. He has worked closely with the Keleket Company in developing the now functional forms of image amplification. In addition to his activities within the Department, Mr. Hammond has been helpful in planning and development for the Departments of Cardiology, Pulmonary Physiology and Dentistry. The demand for his knowledge and experience has become so great that it is difficult to keep his activities from becoming unproductively diffuse.

The research activities of the Diagnostic division have continued on the physiology of pulmonary hypertension, the development of the mandible in the fetus and newborn, the

SUMMARY FOR THE DEPARTMENT OF RADIOLOGY

Year Ending September 30, 1959

| Month | Films | Old cases Diagnostic | New cases Diagnostic | X-Ray Therapy | 1959 |
|-----------|--------|-------------------------|-------------------------|------------------|-------------------------------|
| October | 6,139 | 1,517 | 678 | 319 | Total Films 74,453 |
| November | 5,844 | 1,457 | 676 | 289 | Total Diagnostic Cases 27,095 |
| December | 5,752 | 1,409 | 681 | 307 | Total Treatments 3,546 |
| January | 6,585 | 1,594 | 798 | 330 | 1958 |
| February | 5,744 | 1,365 | 642 | 281 | Total Films 70,693 |
| March | 6,074 | 1,460 | 724 | 212 | Total Diagnostic Cases 25,337 |
| April | 6,392 | 1,499 | 804 | 246 | Total Treatments 3,676 |
| May | 6,285 | 1,492 | 782 | 346 | 1957 |
| June | 6,457 | 1,585 | 787 | 400 | Total Films 71,511 |
| July | 6,814 | 1,764 | 785 | 252 | Total Diagnostic Cases 25,123 |
| August | 6,185 | 1,526 | 741 | 305 | Total Treatments 3,405 |
| September | 6,182 | 1,577 | 752 | 259 | 1956 |
| Totals | 74,453 | 18,245 | 8,850 | 3,546 | Total Films 65,317 |
| | | | | | Total Diagnostic Cases 23,000 |
| | | | | | Total Treatments 2,419 |
| | | | | | 1955 |
| | | | | | Total Films 58,532 |
| | | | | | Total Diagnostic Cases 20,233 |
| | | | | | Total Treatments 2,191 |

DEPARTMENT OF RADIOLOGY

complications of cystic fibrosis of the pancreas, and the utilization of aerosols in double contrast study of the large bowel. In addition, a number of small clinical programs are being actively pursued.

The members of the Department have been particularly active in teaching. Mr. Hammond has taught a number of classes at Northeastern University in the courses for X-ray technicians. Two student technicians from the Saint John General Hospital, Saint John, New Brunswick, and one from the Peter Bent Brigham Hospital rotate through the Department every three months. During the year twenty-six undergraduate or graduate medical students have spent one month or more in the Department, and it is probable that no Department in the Hospital conducts more continuous teaching; at least one member of the Department is teaching every hour during the day. In addition, the staff has been active on the national scene; some twenty-eight out-of-town lectures were given in the course of seventeen out-of-town trips. Committee appointments are held by all members of the Department in national roentgen organizations.

After completing his three-year term, Dr. Martin H. Wittenborg resigned as Consultant to the National Institute of Health, where he served on the Clinical Studies Panel and the Experimental Design Committee of the Cancer Cooperative Studies Program; he has accepted appointment as member of the National Research Council Division of Medical Sciences as representative of the American Roentgen Ray Society. The Radiologist-in-Chief has served as President of the American Roentgen Ray Society and concurrently as the first President of the newly formed Society of Pediatric Radiology.

It is of interest that of the charter members of this society, approximately two-thirds obtained their Pediatric Radiology training at The Children's Hospital of Boston.

Increasing demands have been made upon the Children's Hospital Committee on Radiation Safety as a result of the increased activity within the Hospital, involving almost all services, of research using radioactive isotopes. The Committee acts in an advisory capacity as well as itself maintaining safety standards to protect patients and personnel against radiation hazards. Of this hard-working Committee of three, two are members of the Department of Radiology, Dr. D'Angio and Dr. Wittenborg, Chairman.

Drs. Eckart Sachsse, Urfan Jawhari, John Tampas, Robert Berk and Norman Sadowsky have served as Residents, while Dr. Sisir Bose from India served for over a year as a Rockefeller Fellow, Dimitrije Radjic as a Fellow from his own University at Kingston, Ontario, Dr. Mustaga Sipahi served as Rockefeller Fellow from Ankara, Turkey, and Dr. Ithamar Aviad as Hadassah Fellow from Israel. Among the Volunteer Assistants, there has been Dr. Vivian Harris from New York, Dr. Nurettin Eryilmaz from Turkey, Dr. Ernest Frinton from Vancouver, B. C., and Dr. Keith Rapp from Boston.

Life in the Department of Radiology appears to be one of constantly increasing activity. On the whole, the affairs of the Department have run smoothly and the credit for this goes to the loyal and enthusiastic teamwork of every one of the thirty-four members of the Department.

E.B.D. Neuhauser, M.D.
Radiologist-in-Chief

Bibliography

- D'Angio, G. J., and Brown, B., The potentiation of x-ray effects on normal mouse skin by actinomycin D. *Proc. Am. Assoc. Cancer Res.*, 3:103, 1960.
- D'Angio, G. J., Evans, A. E., and Mitus, A., Roentgen therapy of certain complications of acute leukemia in childhood. *Am. J. Roent., Rad. Therapy & Nuclear Med.*, 82:541, 1959.
- D'Angio, G. J., Farber, S., and Maddock, C. L., Potentiation of x-ray effects by actinomycin D. *Radiology*, 73:175, 1959.
- Maddock, C. L., Brown, B., and D'Angio, G. J., Enhanced response of Ridgway osteogenic sarcoma to x-radiation combined with actinomycin D. *Proc. Am. Assoc. Cancer Res.*, 3:131, 1960.
- Neuhauser, E. B. D., Planning the program. President's address to 60th annual meeting of American Roentgen Ray Society. *Am. J. Roent., Rad. Therapy & Nuclear Med.*, 82:755, 1959.



DIVISION OF LABORATORIES AND RESEARCH

DIVISION OF LABORATORIES AND RESEARCH

The Division of Laboratories and Research was established on July 1, 1946, following a careful study of the needs of The Children's Medical Center and an evaluation of the opportunities of the hospital and all cooperating units, for the greatest contribution to Pediatrics.

The experience of the Department of Pathology during the preceding twenty years formed the basis of this new conception, which was described in terms of the utilization of technics of Biology, Chemistry, and Physics, applied to the several disciplines of Immunology, Experimental Pathology, Pharmacology, Physiology, Genetics, and the like, for the solution of mental and physical problems concerned with the normal and with the sick infant, child, and adolescent. In addition to the performance of its own research, the Division of Laboratories and Research was organized to provide expert professional assistance to the research programs originated and conducted by the several clinical departments of the hospital.

The grouping together of all of the clinical routine laboratories in one department of Clinical Laboratories has provided a professional competence and supervision of a caliber never before realized, and has added importantly to the hospital income.

Only one of the planned laboratories of research basic to Pediatrics was founded directly within the hospital. This was the Laboratory of Infectious Disease Research, under Dr. John F. Enders.

Because of developments which were both natural and fortunate, the outgrowth of the cancer research program in the Department of Pathology resulted in the creation of The Children's Cancer Research Foundation, in 1948. This organization, now affiliated with The Children's Hospital Medical

Center, provides the facilities for the Laboratories of Infectious Disease Research, and also for the many laboratories — Chemistry, Biophysics, Pharmacology, Experimental Biology and Pathology, and Botany—in addition to an Outpatient Clinic which cares for the largest number of children with leukemia and other forms of cancer in the world.

DEPARTMENT OF PATHOLOGY

This is the pioneer department of Pediatric Pathology, first under the late Dr. S. Burt Wolbach, who was associated with it in a part-time capacity for almost forty years. The present Pathologist-in-Chief, Dr. Sidney Farber, has served the hospital continuously since 1927, and holds the position of Professor of Pathology, Harvard Medical School, at The Children's Hospital. Many of the important laboratories of Pediatric Pathology in this country, Europe, and Latin America which have been organized since World War II are headed by men who have received all or part of their training here. The laboratory continues to give training not only to pathologists, but also to clinicians as a background to their future medical or surgical activities.

The routine of the Department is the responsibility of Dr. Gordon F. Vawter and his Junior and House Staff. The work has been of high caliber and has been rendered with devotion and unselfishness not exceeded in any Laboratory of Pathology. The post-mortem examinations, which give information of such great importance to both doctors and the families of patients, are performed with thoroughness of research endeavors, and are recorded with care. Dr. Vawter and his colleagues are always available to members of the Clinical Staff and render an enormous amount of assist-

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ance in the solution of their problems. Such help is difficult to identify and frequently is not sufficiently recognized. The willingness of a staff to carry out such a function, in addition to its own research activities, makes the difference between a great and an ordinary hospital. Dr. Vawter is maintaining a tradition which has been in operation without interruption for several decades.

From July 1, 1959 to June 30, 1960, the department performed 366 autopsies, 113 guinea pig examinations for tuberculosis, examined 656 bone marrow and 1517 other surgical specimens, and held 381 consultations.

Members of the department in training included:

John Craig Kosek

Resident

Ronald Garry Davidson

Assistant Resident

George Diamandopoulos

Asst. Resident (6 mos.-PBBH)

Raymond McBride

Asst. Resident (6 mos.-PBBH)

Herman Polet

Asst. Resident (6 mos.-PBBH)

Francis W. Sullivan

Intern

Donald Singer

Intern

Edward Gerber

*Voluntary Assistant with
duties of Intern (5 mos.)*

The department supplied two one-day-per-week instructors for Harvard Medical School Pathology, and an instructor for one unit in Pathophysiology. A fourth-year medical student from Duke University and a second-year medical student from Jefferson Medical College each spent two months in the department. Additional hours of formal teaching of Harvard Medical students were irregularly scheduled. Members of the department provided instruction for The

Children's Hospital Medical Center Nursing School, Harvard Postgraduate Course in Cardiology, and the Boston University fourth-year Pathology course. The departmental conference schedule has been continued, and Clinical Pathological Conferences continue to be supplied to the *Journal of Pediatrics* at the rate of one per month.

The contributions of Dr. J. LeRoy Conel, continuous since 1931, are recorded in volume after volume describing the development of the brain at various age levels. Dr. Conel has continued to work actively for many years since his official retirement. His contribution is recognized the world over, and forms the basis for evaluation of the development of the brain and of behavior patterns in infants and children.

It is sad to record the loss of Dr. J. Lewis Bremer, at the age of eighty-five. He continued to work productively almost to the end. His book on the embryologic basis of congenital malformations, published by the Harvard Press shortly before he died, represents a major contribution to Pediatrics, Embryology, and Surgery. Dr. Bremer was an inspiration to the young members of the Staff during the eighteen years he worked in the Department of Pathology after his official retirement as Professor of Embryology at Harvard Medical School.

The latest addition to the Department of Pathology came three years ago when we established the Subdivision in Neuropathology, under the leadership of Dr. Betty Q. Banker, a doctor expertly trained as a neurologist as well as a neuropathologist. This laboratory has grown even faster than we had hoped. Dr. Banker's valuable contributions to the professional staff and to the teaching of medical students and house officers

have been documented in a series of publications and hospital records. She has provided the basis for many activities in the Departments of Neurology and Neurosurgery. Excerpts from her annual report are included as she has written them.

There follows selected portions of the reports of the heads of several subdivisions of the Division of Laboratories and Research.

Neuropathology

Dr. Betty Q. Banker

The Neuropathology Laboratory is a unit within the Department of Pathology. This laboratory was established by Dr. Farber three years ago. The group is comprised of several physicians, laboratory technicians, and a secretary. The functions of this group are multiple:

1. The routine study of biopsy and autopsy material of neuropathological interest.
2. The special study of problems encountered in the course of the routine study.
3. The establishment of a teaching center for many to learn the basic fundamentals of neuropathology.
4. The presentation of neuropathological material to the pathologists, neurologists, neurosurgeons, and pediatricians.

Scope of Work. Data from approximately 80 per cent of the autopsies have been studied in this laboratory. Reports from each case are incorporated into the pathology protocol. There is a wealth of opportunity for study because many problems in pediatric neurology are unexplored and undescribed. In many diseases, there has been no attempt to study accurately, nor to understand the pathogenesis. This subject of Pediatric Neuropathology is truly in its infancy.

DIVISION OF LABORATORIES AND RESEARCH

Personnel. The number of research fellows varies over the course of each year. Each year there has been a full-time fellow. In addition, residents from Neuropathology at the Massachusetts General Hospital rotate every three months for a two-month period at Children's Medical Center and a one-month period at the Warren Museum.

Last year, one of our neurosurgeons spent six months in the laboratory. Each year a travelling fellow from a European country has also joined our group.

STAFF

1. Betty Q. Banker, M.D.
2. James Q. Miller, M.D.
Fellow — National Institutes of Health. July 1, 1960-July 1, 1961.
3. Olga M. Blair, M.D.
Fellow—December 1, 1958-July 1, 1960.
4. Frederick Horner, M.D.
Fellow—November 1, 1958-May 1, 1959.
5. Jeanne-Claudie Larroche, M.D.
Rockefeller Fellow — January, 1959-August 1960.
6. James Robertson, M.D.

Fellow in Neurosurgery CHMC
—September, 1959-April, 1960

7. Gerald Winkler, M.D.
Fellow in Neuropathology MGH
— September, 1959-December, 1959.
8. William J. McEllroy, M.D.
Fellow in Neuropathology MGH
—January 1960-April 1960.
9. Daniel B. Drachman, M.D.
Fellow in Neuropathology BCH
—February 1960.
10. Chim Mayman, M.D.
Fellow in Neuropathology MGH
—May 1960-July 1960.
11. Federiko Lopez, M.D.
Fellow in Neuropathology MGH
—June 1960-October 1960.
12. Alexander McPhedran, M.D.
Fellow in Neuropathology MGH
July 1960-October 1960.

Conferences. There is a great demand for teaching conferences by the neurologists, neurosurgeons, and other groups in the city. Although these meetings serve as a stimulus, too much time in the course of one day is spent in conferences. At the present time, for the size of the senior staff, a typical week is shown below.

CONFERENCES IN NEUROPATHOLOGY

| Day | Time | Place | Purpose | Group |
|--------------------|------------|-------------------|------------------------------------|-----------------------------------|
| Monday | | | | |
| Tuesday | 9-12 | Neuropathology | Routine Microscopic | Neuropathology |
| Thursday | | | | |
| Wednesday | 9:30-10:30 | Pathology Library | Neuropathology Presentations | Neurology and Pathology |
| Friday | 9-11 | Autopsy Room | Weekly Gross Neuropathology | Pathology and Neuropathology |
| Friday q 2 weeks | 4-6 | Autopsy Room | Clinical Neuropathology Conference | C.H.M.C. and Boston City Hospital |
| Saturday q 2 weeks | 9-10 | Pathology Library | Microscopic of Brain tumors | Neurosurgery and Neuropathology |

Presentations in 1959-1960

1. Banker, Betty Q.
Occlusive Cerebral Vascular Disease in Infancy and Childhood.
American Neurological Association, Atlantic City, June 1959.
2. Craig, John M. and Banker, Betty Q.
Atypical Form of Gargoylism.
American Pediatric Society, Buck Hill Falls, May 1959.
3. Byers, Randolph K. and Banker Betty Q.
Muscle Disease in Infancy and Childhood (A Ten-year study).
International Pediatric Congress, Montreal, July 1959.
4. Robertson, James and Banker, Betty Q.
Spongy Degeneration in Infancy and Childhood (A Clinical Pathological Study).
American Academy of Neurology, April 1960.
5. Banker, Betty Q. and Larroche, J. C.
Non-Progressive Periventricular Leukomalacia.
American Association Neuro-pathologists, Boston, June 1960.
6. Byers, Randolph K. and Banker, Betty Q.
Werdnig-Hoffmann's Disease.
American Neurological Association, Boston, June 1960.
7. Banker, Betty Q.
The Experimental Studies in Periventricular Leukomalacia.
American Academy of Neurosurgery, Boston, October 1960.

Projects. The following work is in progress and should be in press within the next few months:

1. Spongy Degeneration of Infancy
2. Arthrogryposis Multiplex Congenita
3. Periventricular Leukomalacia
4. Werdnig-Hoffmann's Disease (Infantile Spino-Bulbar Muscular Atrophy).

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Work in progress

1. Experimental Studies of Cerebro-Vascular Distribution in Periventricular Zones. Injection studies employing the Schlesinger technique have been started in an attempt to define the vascular supply in the periventricular zones of brain. The frequent necrosis of white matter of the newborn occurs in characteristic zones in deep white matter. We postulate that these lesions are related to the "border zones" of the three major cerebral vessels. However, proof of such is lacking, because no investigations of cerebral blood supply have included these deep key zones. We shall also attempt to demonstrate a difference in vascularization of brain in the premature, newborn, and mature brains.

2. Dermatomyositis. A clinical-pathological study of dermatomyositis is in progress. The purpose of this project is to study carefully the vascular factors in this disease and to define accurately the pathological changes. Material will be studied from children dying before steroid therapy was employed as well as from those who have had the benefit of such treatment.

Recommendations

1. More space. With the expansion of this group, we are desperately in need of more space. Our research fellows have been working in a small passageway (fire exit) next to the laboratory, and in the slide file room. These rooms have no ventilation in the summer, are dark, and the passageway is cold and drafty in the winter time.

2. The future. At the end of three years of uninterrupted work in the Neuropathology Laboratory, I do not cease to be amazed at the wealth of opportunity here for study, and the challenge of studying diseases about

which nothing has heretofore been learned.

THE RESEARCH DIVISION
OF INFECTIOUS DISEASES**Personnel**

During this period the following individuals have participated regularly in the work of the Division:

John F. Enders, Chief
Sidney Kibrick, M.D.

Research Associate
Samuel L. Katz, M.D.

Research Associate
Robert B. Berg, M.D.

Postdoctoral Research Fellow,
National Institutes of Health,
U.S.P.H.S.

Melvin S. Rosenthal, M.D.
Postdoctoral Research Fellow,
National Institutes of Health,
U.S.P.H.S.

Marcel W. Pons, Ph.D.
Postdoctoral Research Fellow,
National Institutes of Health,
U.S.P.H.S.

James W. Mosley, M.D.
Communicable Disease Center,
U.S.P.H.S.

Ion Gresser, M.D.
Postdoctoral Research Fellow,
The National Foundation

Sumner Berkovich, M.D.
Postdoctoral Research Fellow,
The National Foundation

Edward De Maeyer, M.D.
Lederle International Fellow

Monto Ho, M.D.
Postdoctoral Research Fellow,
Jane Coffin Childs Memorial
Fund for Medical Research.

In addition, the following undergraduates of the Harvard Medical School as special students received training in laboratory techniques and methods of research:

Harvey Shein
John Bachman
Eliot Berson
Alan Cooper

Research

As in the immediate preceding years, the research activities of the Division may be roughly divided into the following categories:

Studies on the development of a live attenuated virus vaccine against measles.

Studies on virus-cell relationships. Clinico-laboratory studies of patients with viral infections or those suspected to have viral infections.

Other investigations.

Measles Vaccine. Since our last report covering the period January 1, 1958-December 31, 1958, progress toward the development of a measles vaccine may be summarized as follows:

Two vaccines were prepared for trial in susceptible children. These consisted of active virus of the Edmonston strain attenuated by passage in chick embryonic tissues as described in a previous report. These vaccines were designated vaccine A and B respectively. The virus employed as vaccine A had received a total of fifty-two consecutive passages in cultures of human kidney and amnion cells, six passages in chick embryos and fourteen passages in cultures of chick embryo cells. Vaccine B consisted of virus subjected to six additional chick embryo passages and four chick cell passages. Vaccine B was prepared with the purpose of determining whether additional passages in chick cells might induce further attenuation.

These vaccines have been tried in children by various groups of investigators located in different sections of this country. The first trial was carried out by Dr. Katz and Dr. Enders in an institution for children located in the vicinity of Boston. The results of these trials, which have been presented *in extenso* in a series of papers

DIVISION OF LABORATORIES AND RESEARCH

published in the *New England Journal of Medicine*, may be summarized as follows: A total of 303 children received either vaccine A or vaccine B. No difference in the intensity of the clinical reactions were noted in those receiving vaccine B as compared with those in individuals receiving vaccine A. Thirty-one children were given the vaccine by the oral, intranasal, or conjunctival routes. Nearly all of these children failed to react to vaccine. The remaining 272 children received the vaccine subcutaneously. One hundred seventy-one of these children were considered to be susceptible to measles on the basis of serologic tests. Of these 165, or 96.5% subsequently developed antibodies against the virus. Antibodies developing as a result of vaccination have been shown to persist for one and one half years in satisfactory concentration in the first group vaccinated.

Clinical responses following vaccination consisted of temperature elevations, appearance of a modified rash and in a few instances the presence of koplik spots, mild conjunctivitis, and slight coryza. Fever was recorded in 83 per cent of 171 children considered to be susceptible and rash in 48 per cent. The average maximal temperature (by rectum) was 102.4 degrees. Malaise and prostration were in general absent. Nearly all children continued their normal activities throughout the post vaccinal period of three weeks during which they were observed. No complications attributable to the vaccine were noted. Virus was not recovered from the circulating blood of those studied or from the throat.

In essence, then, the vaccine was found to induce a mild, much modified benign infection that results in a prompt antibody response which tends to persist.

Direct evidence for a high prophylactic efficiency of the vaccine within short periods after administration was obtained by certain of the participating investigators. Dr. Saul Krugman of the New York University School of Medicine reported complete protection in a group of twenty-three children vaccinated seven weeks previously and naturally exposed to measles in an institutional environment. Among a control group of twenty-three unvaccinated children housed in the same ward seventeen developed measles. Lepow and her associates in Cleveland and Haggerty and his associates of The Children's Hospital Medical Center in Boston have followed twenty-one successfully vaccinated children who had no evidence of disease following intimate exposure to siblings with natural measles.

More recently the vaccine has been administered by Dr. Harry Shwachman of The Children's Hospital Medical Center, Boston, to about fifty children with pancreatic fibrosis. No severe reactions were observed in any of these children although some were in a debilitated condition resulting from chronic disease. This group was selected because natural measles is frequently followed by serious illness in patients with pancreatic fibrosis.

Dr. Frederick Gibbs and Dr. Ira M. Rosenthal in Chicago have taken electroencephalograms on approximately forty children following vaccination. In only one child was deviation from the normal pattern noted. This individual was suffering from an intercurrent respiratory infection. In a larger group with natural measles these workers found abnormal changes in about one half the cases. These negative findings in vaccinated children therefore give some assurance that the central nervous system is not

affected following vaccination.

In November 1960 a small group of children were vaccinated in West Nigeria. In this country measles presents an acute problem because of serious morbidity and significant mortality which follows the disease, apparently because many children suffer from various bacterial, protozoal, and helminthic infections and from malnutrition. The trial was carried out by Dr. Samuel L. Katz and Dr. David Morley, pediatrician at the Wesley Guild Hospital in Ilesha, West Nigeria. Final data are not yet available. However, the clinical responses of these children did not differ significantly from those encountered with the vaccine in this country. It is hoped that arrangements can be made for more extensive trials in this area, although definite commitments have not yet been made.

A number of American pharmaceutical companies and at least one British firm are interested in the possibility of producing the attenuated measles vaccine. Several have already manufactured vaccines which are under trial. Methods of freezing and drying the vaccine with preservation of viral activity have been developed by some of these manufacturers which will facilitate the distribution of vaccine on a large scale should this be required in the future.

Studies on Virus-Cell Relationships and on Biological Properties of Viruses.

a) *Interferon.* An analysis of the production and effect on interferon or VIF ("viral inhibitory factor" as it is termed in this laboratory) in tissue cultures infected with measles and poliovirus was completed by Dr. Ho and the results published. Dr. De Maeyer extended these findings in respect to measles virus. He observed

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that in cultures infected with the attenuated Edmonston strain the amount of interferon produced is significantly greater than in cultures infected with virulent measles virus. Similar differences in interferon production were found in cultures infected with attenuated (vaccine strains) poliovirus and those infected with virulent strains. These observations, if confirmed and extended, may serve to define one of the factors involved in viral attenuation. This would be helpful since the properties which determine virulence or lack of it are largely unknown. Such differences may also be of practical significance in affording additional "markers" whereby variants in respect to virulence can be distinguished.

b) *Effect of Cortisone on in vitro Viral Infection.* In cultures infected with an unidentified simian virus, which under routine conditions of cultivation produces slight cytopathic effects, the addition of cortisone led to the development of widespread cellular changes. This is the first instance, so far as we are aware, that cortisone *in vitro* has clearly enhanced the cytopathic effect of a virus. Results have recently been obtained suggesting that cortisone may act in this way by suppressing the production of interferon in this system.

c) *Multiplication of Measles Virus in Blood Leucocytes.* In attempts to distinguish mechanisms that may account for the leucopenia so characteristic of many viral infections experiments were undertaken to determine whether measles virus would multiply in blood leucocytes. Berg and Rosenthal found that this agent proliferated actively in suspensions of human and monkey leucocytes but not in those of certain other species insusceptible to measles infection. Evidence was obtained that viral multipli-

cation took place largely, if not entirely, in monocytic cells.

d) *Effect of Trypsin on Myxoviruses.* Because of its possible value as a criterion for the future classification of viruses as well as possible applications to the study of viral structure a study of the effect of trypsin on representative strains of myxoviruses was carried out by Dr. Ion Gresser. Its effect both on the infectivity and the viral hemagglutinin were examined. The results showed that these agents could be separated into three groups in accordance with the stability of these two properties: one group in which both properties were trypsin-resistant, a second in which infectivity was diminished but the hemagglutinin was unchanged and a third in which both infectivity and hemagglutinin were impaired.

e) *Effect of pH and CO₂ Tension on Infection of Cells by Viruses.* Research on the influence of these factors on cellular infection and resistance is currently in progress.

Clinico-laboratory studies

a) *Enteroviruses.* Dr. Kibrick and Dr. Berkovich have carried out a virological and serological analysis of 137 cases of paralytic poliomyelitis occurring in this area in 1959. In all these cases Type III poliovirus was shown to be the responsible agent. Nearly one half of these cases occurred in children who had received three or more doses of Salk vaccine. The results of this study indicate that the incidence of paralytic disease in vaccinated individuals was significantly higher than in the rest of the country where the prevalent virus was polio Type I. Serologic data were obtained suggesting that the failures may have been due to vaccine of low antigenicity since many of the cases exhibited no neutralizing antibodies for Type I

virus. That failure of the host to respond to an effective antigenic stimulus was not responsible was indicated by the prompt development of Type III antibody during convalescence.

b) *Respiratory Viruses.* Dr. Kibrick continued the investigation of cases in the hospital with respiratory infections. In addition to the rather frequent isolation of Group Associated virus from patients of this class he has recovered a number of agents which have not yet been identified.

c) *Viral Infections of the Newborn.* Dr. Kibrick has also continued to examine materials of clinical and pathological interest from premature and newborn infants to extend our knowledge of disease due to viral agents in this age group.

d) *Completion of Studies on the Etiology of Giant Cell Pneumonia.* Studies originally initiated by Doctors Kevin McCarthy and William Cheatham in 1955 on the role of measles virus in Hecht's giant cell pneumonia were extended and have been completed by Dr. Anna Mitus and her co-workers. The results have been published. It was shown that measles virus was responsible for the cases of this disease from which autopsy materials were available in The Children's Hospital Medical Center. Furthermore, in a correlated study of pneumonia following measles in leukemic children who were patients in The Children's Cancer Foundation clinic it was shown that the antibody response was markedly depressed. Associated with this effect was a persistence of virus in the oropharynx beyond the normal limits.

e) *Isolation of Measles from the Urine.* From six to eight patients with naturally acquired measles, the virus was isolated from the urine by Doc-

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tors Gresser and Katz. This is the first time the virus has been demonstrated in the urine. It is of interest that in one case the agent was recovered from the urine four days after the appearance of the rash. At this time attempts by various workers to demonstrate the agent in blood and throat secretions have failed.

f) *Attempts to Cultivate the Virus of Infectious and Serum Hepatitis.* Dr. James W. Mosley of the Communicable Disease Center, U. S. Public Health Service, has attempted to demonstrate the multiplication of these agents in various types of cultures of human cells. As criterion for viral multiplication it was considered that output of transaminase by the cells might become significantly altered. Accordingly, Dr. Mosley perfected procedures for measuring these enzymes in cell cultures and applied them to a comparison of cultures inoculated respectively with materials considered to contain one of the two hepatitis viruses. No effect on transaminases (GOT and GPT) was observed.

Other investigations

a) *An Inhibitor of Ribonuclease Activity.* Dr. Marcel W. Pons investigated various substances capable of inhibiting ribonuclease activity that have been described in the literature with the objective of determining whether any could be employed in cell cultures without injury to cellular activity. The only material that appeared to be at all promising was an inhibitor derived from lilac leaves, described by Bernheimer and Stack. As prepared by them the substance was mildly cyto-toxic. Dr. Pons devised a method of purification of the lilac leaf inhibitor which exhibits little or no toxicity. He then found that the inhibitor had no effect on the multi-

plication of poliovirus—an RNA virus—nor on measles virus. The inhibitor proved useful in studies involving the acridine orange staining of cells since the loss of RNA staining due to contaminating RNase in the preparations was prevented by treatment with the inhibitor.

b) *Possible Presence of RNA Polymerizing Enzymes in Normal Horse Serum.* During the course of investigation on the effect of various ammonium sulphate fractions of horse serum on ribonuclease activity of calf amniotic fluid, Dr. Pons noted an apparent increase of acid precipitable RNA in systems containing RNase, yeast RNA and the horse serum fraction. Inhibition of RNase by lilac leaf inhibitor prevented the apparent increase in precipitable RNA. Although the phosphorous in the precipitate was increased, pentose, as measured by the orcinol test, was not. The ultimate significance of these findings remains to be determined, but obviously if polymerization of RNA subunits is in the future clearly demonstrated under these conditions, the findings would be of much interest.

Honors. In 1959, Dr. Katz was designated by the Boston Junior Chamber of Commerce as one of the outstanding young men of the year. Dr. Enders received, in 1960, an honorary degree of Doctor of Science from Tufts University and Doctor of Humane Letters from the University of Hartford. He was also awarded the Cameron Prize in Practical Therapeutics by the University of Edinburgh.

Publications. A list of papers written by members of the Division as well as those submitted for publication or in preparation is appended. (See p. 109).

CLINICAL LABORATORIES

Harry Shwachman, M.D., Director
1960

Personnel

We have had a difficult time this past year because of the shortage of trained technicians. The turnover was somewhat greater than usual. The main reason for the latter is marriage.

Miss Anne Rush, the head technician of our Hematology Laboratory, left to be married and she was replaced by Mrs. Elaine Nelson, who recently resigned because of pregnancy.

Miss Barbara Williams and Miss Norma Baker continue as head technicians in Chemistry and Bacteriology, respectively.

In attempting to replace our technicians, we have had assistance from the Personnel Office. We recently suggested that newspaper advertisements be placed in order to fill vacancies. Inasmuch as this is a problem common to all our local hospitals, a farsighted program might be considered which would establish a school for technicians. We have taken on a few individuals for training purposes because of need rather than a desire to operate a school. The Planning Committee of the Hospital may consider, with profit, the establishment of a training school for laboratory technicians. In this connection, affiliation with local colleges may provide the proper basic science background for proposed students.

Night Coverage

In providing continuous twenty-four hour service, we have had the assistance of Harvard Medical School students, who serve as technicians during nights, weekends and holidays. This arrangement continues to be satisfactory. In view of the increased load of

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work that has been requested of our night technicians, many of our students had to drop out. We have increased coverage and have also made the position financially more attractive and in line with the opportunities the medical students have in other institutions in the city.

Physicians

We have suffered a sad loss in the death of Dr. Eva Fekete, who worked in the Bacteriology Laboratory on problems concerned with hospital infections and patients with cystic fibrosis. One of her recent achievements was the demonstration by the Outchery technique of the presence of antibodies against Staphylococci in the serum of a series of patients with cystic fibrosis. She also demonstrated, for the first time in this institution, the presence of milk antibodies by the above technique in the case of a youngster who had chronic recurrent pulmonary symptoms. The presence of chronic pulmonary changes due to milk and the demonstration of antibodies to milk was pointed out by Dr. Heiner, formerly of the Medical Service. This one patient has shown considerable improvement following the removal of milk from the diet and is being followed by Dr. Cook. Dr. Fekete was assisting in the phage typing of Staphylococci and was beginning to do special studies with the *Pseudomonas* which is now the most common terminal microorganism in patients with cystic fibrosis.

Dr. Robert Rosan was a resident in the clinical laboratory and left on December 31, 1959, after completing one and one-half years with us. He was of considerable assistance while he was in charge of the laboratory, and in the clinical study of a selected group of patients with nutritional disturbances. Some of his investigative

work resulted in a study of cystic fibrosis patients from the point of view of tocopherol deficiency. He also worked on a small group of patients with cystic fibrosis, who developed diabetes. He performed tolbutamid tolerance tests in this group of patients. We hope, in the near future, to have some of his observations incorporated in a study of the complications of cystic fibrosis.

Dr. Lucas L. Kulczycki has been primarily involved in the care of patients with cystic fibrosis and in the clinical problems related to this disease. He is available to assist patients who come here for laboratory tests, and to lend a helping hand to any of our technicians when so called upon. His main income is derived from cystic fibrosis research funds. He also takes an active part in the Maine Medical Center Cystic Fibrosis Clinic.

Dr. Ezra Elian, a Research Fellow, left us in July 1960 after spending nineteen months with us. Dr. Elian was recommended by Dr. Matoth, who had formerly worked at The Children's Hospital Medical Center and now serves as his Chief in the Sharon Hospital, Petsh Tikva, Israel. Dr. Elian worked both in the clinic and in the laboratory on a variety of problems. He was involved in chemical studies of sweat, the study of meconium, and in the development of improved technique for sweat testing. He also had an opportunity of learning a variety of laboratory procedures and methods of investigation which I think will be of considerable help to him in his future work. He is a co-author of two papers which have been accepted for publication.

Dr. Sami Kassim came as a part-time research fellow from Iraq. He formerly worked with us and has been familiar with the clinical management of patients with cystic fibrosis. Now,

he spends half of his time with Dr. Massell in the Rheumatic Fever Clinic. His wife is a Doctor of Astronomy at the Harvard Observatory.

Dr. Kon-taik Khaw came to us on July 1, 1960 as a research fellow, after completing a residence with Dr. Gellis at the Boston City Hospital. He is of considerable help to us in the management of patients with cystic fibrosis, and in the routine laboratory.

Dr. Mervin Silverberg spent from July 1959 to December 31, 1959 working with us on the clinical problems seen in our Nutrition Clinic. In addition to familiarizing himself with our program, he and Dr. Elian joined in carrying out an interesting clinical problem. They reviewed our patients with cystic fibrosis, who had previously been hospitalized at The Children's Hospital and in whom the diagnosis had not been suspected during hospitalization. Approximately twenty such patients comprise the series. It is our plan to broaden this project and present a report on the uncommon or previously unrecognized manifestations of cystic fibrosis. Dr. Silverberg is now in Montreal in practice and spending part of his time at The Children's Hospital.

Dr. Maria Nicholaidou left us on September 29, 1960 for her home in Athens, Greece, after spending two years at this hospital. She spent approximately nine months with us. Her studies on the amino acid content of plasma and red cells was done in the Laboratories of the Department of Physical Chemistry at the Medical School, in Dr. McMenemy's Laboratory. She has worked independently. The source of her patients has been The Children's Hospital and the Boston City Hospital. Dr. Nicholaidou was exposed to our methods in the clinical management and investigation

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of patients with cystic fibrosis and celiac disease. She has high hopes of continuing her studies in nutritional problems when she returns home.

Nutrition Clinic

This clinic is designed primarily for long-term follow-up of children who have chronic nutrition problems. The majority of patients seen in this clinic are those having cystic fibrosis of the pancreas, celiac disease, and conditions resembling these diseases. In addition there are a small number of children with other metabolic or emotional problems in which growth and nutrition are affected. Between fifteen and twenty patients are seen in the clinic on each clinic morning. We now have three rooms in the Medical Out-Patient Department in which to see our patients, and a large teaching room, which, however, is not available until approximately 9:30 A.M. Since our clinic begins promptly at 9:00 there has been some unnecessary loss of time. Furthermore, it is not convenient to interview two people in the same large room. All in all, we are not entirely happy with our present arrangement, but we do understand the crowded conditions and facilities of the Medical Out-Patient Department. It is a great advantage to have a clinic where parents can come and discuss their problems. This is not as readily available as in our former quarters, where a large room for such conversations could be had in semi-privacy.

The clinic patients are also seen, from time to time, in our office area because of the type of care children with cystic fibrosis require. It is not uncommon for patients to telephone in for advice or to come and visit in our office area when medical problems arise. For patients for whom it is a great hardship to come on Fridays, we make special arrangements for one of

our Fellows to see these patients on some morning during the week or on Saturday mornings, if this will ease the total family burden. We are fortunate in having a fairly large number of our patients, approximately 240, enrolled in the State Aid Program (the Crippled Children's Program of the Maternal and Child Health). This program provides antibiotics, either free, which is the case in most of our 240 patients, or at a 50 per cent cost to a small number of people with moderate means and who could afford to pay for this. In addition, the \$6.00 clinic fee is paid to the hospital for each visit. Short-term hospitalizations are also provided by the State. My office secretary keeps a record of the clinic visits and prepares a report for Dr. Rafuse periodically. When this program was started, approximately three years ago, we were required to write a brief report on each patient on each clinic visit. This tremendous burden has now been lightened so that we now are required to submit the name and date of each visit only. Resumés of cases are provided whenever Dr. Rafuse requests this information.

Our clinic offers an opportunity for visiting physicians and parents from other parts of the country to learn more about the disease, cystic fibrosis. A number of pediatricians have attended our clinic. Each patient is checked thoroughly and we devote approximately one hour per patient visit. Patients are sent to our physiotherapy department, as indicated. Special observations are made in line with some of our research activities.

Since April of this year we have been able to inoculate our children with Dr. Enders' measles vaccine. This is rather an important prophylactic procedure because the appearance of measles in children with cystic fibrosis may begin a downhill course. At the

time of this writing we have vaccinated at least fifty children with relatively minimal reactions. Dr. Katz acts as our consultant in this project.

We have also utilized some of our clinic patients for our studies in trying to develop improved techniques for diagnosis and one of our current projects is an attempt to use electrical conductivity measurements from the skin to determine if such a procedure could be developed which would do away with chemical analysis and provide a much quicker and perhaps a better diagnostic test. This has not yet proven successful. We have the assistance of one of the scientists from Baird Atomic working on this project with us.

Other special projects in which we have used the combined clinic and research area for our studies includes the following: the incidence of diabetes in cystic fibrosis, the frequency of allergy in a large group of patients with cystic fibrosis, the relationship of nasal polyposis to cystic fibrosis, and the secretory function of the parotid glands.

We feel that laboratory investigations form an intrinsic part in the proper management and study of the patients we see in our Nutrition Clinic.

Maine Medical Center, Portland

A brief statement concerning the Maine Medical Center is given because we provide the supervisory and consultant staff. Nearly two years ago a clinic was established at the Maine Medical Center for the diagnosis and treatment of patients with cystic fibrosis and related conditions. This clinic is under the joint auspices of the Center, the Maine State Health Department, Division of Maternal and Child Health (Dr. Ella Langer) and the Maine Cystic Fibrosis Chapter.

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The clinic meets once monthly and more frequently, if necessary. The attending staff consists of the local pediatricians in the Portland area, in addition to Dr. Kulczycki, one of our Fellows and myself. Either Dr. Kulczycki or I supervise each clinic, with an attendance of from twelve to sixteen patients. I believe the roster of cystic fibrosis patients in this clinic is approximately sixty.

Lectures and Exhibits

1. American Academy of Pediatrics: Annual Meeting, October 3-5, 1959. Address before the section of allergy on cystic fibrosis on October 4, 1959.
2. Massachusetts State Grange, Auditorium, Springfield, October 28, 1959. Acceptance speech for \$7,000 contribution to cystic fibrosis research at The Children's Hospital Medical Center.
3. Attended Seventh Antibiotic Symposium in Washington, D. C. Mayflower Hotel. November 4-6, 1959.
4. Visiting Professor, University of Puerto Rico, November 16-24, 1959. (A report on this experience submitted.)
5. Radio — National Hookup on Cystic Fibrosis. February 11, 1960. Local Broadcast March 7, 1960.
6. Award and special honors. February 13, 1960. Rhode Island Chapter of Cystic Fibrosis.
7. Attended National Cystic Fibrosis Research Foundation meeting (Executives) in New York, March 10, 1960. Presented report of Education Committee.
8. New England Society of Allergy, March 30, 1960.
 - (a) Respiratory Allergy in Pa-
 - tients with Cystic Fibrosis—Dr. Kulczycki.
 - (b) Technique and Results of Sweat Analysis—Dr. Shwachman.
9. Evening speaker, Massachusetts C.F. Chapter — April 2, 1960. Evening speaker, Rhode Island C.F. Chapter — April 30, 1960. Evening speaker, Connecticut C.F. Chapter — May 14, 1960. Topic: Current Research in Cystic Fibrosis.
10. Academy of Medicine, Cleveland, Ohio. Evening address on Cystic Fibrosis—April 15, 1960. Afternoon—member of panel on cystic fibrosis.
11. Society for Pediatric Research, Swampscott, May 2 and 3, 1960. Participated in an all-day informal session on cystic fibrosis: paper given from workers in U.S. and Canada.
12. 69th Annual Meeting of Arizona Medical Association, Scottsdale, Arizona, May 4 to May 7, 1960. Papers on
 - (1) Staphylococcal Infections in Childhood.
 - (2) Malnutrition in Childhood, on panel on Psychiatry in General Practice and the Specialties.
13. Symposium on the Pancreas: Endicott House, Dedham, Mass. Chairman—Dr. Sidney Farber. Secretary—Dr. Shields Warren. Participant, May 23-25, 1960.
14. Central Maine General Hospital, Lewiston, June 8, 1960. The Clinical Laboratory—New Tests and Interpretations of Laboratory Data.

Other Lectures

1. Occasional A.M. lecture in M.O.-P.D., Surgical and Orthopedic

rounds and consultations.

2. One Hour Lecture—4 to 5 times during the year to nurses (Children's Hospital School of Nursing) on Cystic Fibrosis and Celiac Disease.
3. Participation in organization and teaching of a one-week course (three given to date) for physiotherapists in the management of patients with cystic fibrosis. This course under auspices of our own Physiotherapy Department (Miss Cogland and Mrs. Zausmer).
4. Occasional lectures to Postgraduate students.
5. Clinics or lectures in neighboring hospitals, such as:
 - C.P.C. at Boston Floating Hospital, 1-18-60.
 - P.B.B.H. Grand Rounds, 3-18-60.
 - B.I. Lectures, 4-18-60.
 - Joslin Clinic, Lectures. Diabetes in Cystic Fibrosis, 1-25-60
 - M.G.H. Informal discussion with G.I. group, 3-21-60
 - B.L.I., C.P.C., February 10, 1960.
 - North Shore Babies Hospital, Rounds, 2-15-60.

Other Activities

Member, Committee on Tuberculosis and Respiratory Diseases in Children, American Trudeau Society. One year, 1959-60.

Consultant, Pediatrics. Chelsea Naval Hospital. Seven visits per year.

Secretary-Treasurer, New England Pediatric Society.

Re-elected to office, 1960-1961.

Chairman—Education Committee National Cystic Fibrosis Research Foundation.

During the year received manuscripts from a number of editors, requesting opinion.

Laboratory Equipment

At the present time we are moderately well equipped. We can foresee need

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for the Technicon Auto-analyzer, which will yield more reproducible results and will undoubtedly save technician time if the volume of any one test is sufficiently great. At the present time it is estimated that the installation of such an instrument will cost approximately \$5,000. Once installed, such an instrument will process well over 100 determinations in one half day. Most of the major hospitals in this area already have one instrument and some, two. The volume of any one test in our laboratory is perhaps not sufficiently great to justify this expenditure at this time. However, if one or more determinations could be done, and if the volume of work is sufficiently great, the acquisition of such an instrument will prove an economic advantage by elimination of one technician and by providing more constant uniform results than is possible by individual analysis by a variety of technicians.

During this past year we have acquired a micro Beckman Spinco analyzer, which is being explored for adaptation to the micro analyses of serum specimens. We have not yet utilized this instrument routinely, as it is still in the process of exploratory usage.

The main chemistry laboratory appears to be fairly well equipped and at present the only exception is the probable need for a new centrifuge this coming year as the current machines are very old and have been repaired so often that we have been advised that they will probably not last too much longer. One of our chemistry laboratories is in need of modernization and perhaps in the near future a plan can be worked out for this laboratory, which is room 3210.

One of the problems that has recently come to our attention is standardization of bilirubins.

The bacteriology laboratory is, indeed, cramped, and we are bursting at the seams. We are fortunate in having space made available in the Jimmy Fund Building for our entire phage typing program. Even here, at times, the space has been limited. We are in dire need of adequate laboratory space for the routine bacteriology laboratory. I should like to point out that the amount of work has increased tremendously in this laboratory over the past four years. There is serious need for a highly competent professional bacteriologist to conduct the routine studies in this most important field. The lives of our patients literally depend upon the quality of the work in this laboratory. The volume of work has so grown that more expert help is essential.

We continue to participate in the State Approval Program and have received excellent reports from the State Laboratories concerning the identification of unknown specimens in a variety of categories. This voluntary participation provides us with an approval certificate which must be earned anew.

The hematology laboratory is grossly inadequate in size for the number of people working in it.

The volume of work has increased again. The total number of individual tests is 159,317—or four times the number carried out in the same space ten years ago!

REPORT OF RESEARCH PROGRAM

Conducted Jointly by the Departments of Orthopedic Surgery and Pathology of The Children's Hospital Medical Center and The Children's Cancer Research Foundation.

By Dr. Jonathan Cohen, under the responsibility of Dr. William T. Green, with the cooperation of Dr. Sidney Farber.

Personnel and Facilities

During the present reporting period, many changes in personnel have taken place. John Burke continues to supply outstanding technical, historical preparations. Animal care has been resumed under the direction of Cornelius Vos and has, therefore, been somewhat better than during the previous period when his services were devoted entirely to other laboratories. However, animal care has remained a problem because of specialized needs of some animals under investigation with special techniques. The entire personnel of the laboratory, including secretary, technicians, and investigative personnel, have collaborated to meet these needs, and this has worked out well.

During the period of the present report, only two residents have been assigned for duty in the laboratory, in addition to Dr. Marvin Weinfeld, mentioned in the previous report. They are Dr. Arthur Pappas, who enters on a period of between eight and twelve months of laboratory service designed to provide him with basic science training and also to continue his investigative work, started at the National Institutes of Health. There, he was occupied with the problems of total body radiation and some problems involving tissue culture of cells for the purpose of studying radiation. His immediate supervisor at the National Institutes of Health was Dr. Hyatt, who is in charge of the tissue bank at the Naval Medical School. Another resident who has begun his period of service in this laboratory is Dr. Seymour Zimble, who is to serve from July 1 to December 31, 1960. Dr. Zimble's period in the laboratory is to be devoted to study of basic science in preparation for his orthopedic training.

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With relation to the study on the Assay of Foreign Body Reactions, the employment of Mrs. Vida Barrs as a chemistry technician, has been a stabilizing influence on the needed chemical work done with relation to that program. Analyses for chromium, nickel, and molybdenum are now performed in routine fashion on many specimens as will be detailed below. Further elaboration of analyses on other elements in the metallic objects under investigation will be her principal methodological occupation in addition to the routines. Professor Licht mentioned in the previous report, has provided some of the consultation in chemistry which has been needed and in addition, the Chemistry Department at the Watertown Arsenal, in which Professor Licht and Bernard Mahoney, a previous employee of this project, have been active, are also now serving in that capacity. The collaboration of this laboratory has continued with the Radioactivity Center of the Department of Biophysics at M. I. T. (Dr. Robley Evans, Director) and with Dr. Constantine J. Maletskos of the Nuclear Reactor Laboratory, but more recently appointed to the Radioactivity Center. One of the achievements of this collaboration has been the preparation of the report mentioned below, and the furthering of the radium toxicity investigation now proceeding at the M. I. T. facilities.

The control panel of the building, having been finished during the period of the last report, the personnel have enjoyed quiet working conditions during the period of this report. However, the prospect of new quarters elsewhere in the present building has influenced greatly the plans of this laboratory, which are being expanded but with indefinite goals both as to space and time because of the lack of concrete knowledge as to when

the new quarters will be available and how large they will be.

The Saltonstall Laboratory in the main building of the hospital has continued to serve well with regard to electromyography and histological studies.

Work in Progress

1. Radioactive Calcium Tracer Studies. The previously mentioned collaboration with Dr. John Marshall of the Argonne National Laboratory has been completed and the publications listed below are the final results of this collaboration.

2. The Dynamics of Strontium and Calcium Metabolism and Radioelement Removal. This study has seen publication as listed below, and no further work in this area is contemplated. However, a large amount of data previously accumulated in collaboration with Dr. Maletskos, and which formed the basis of a publication in 1957, but which was not included in that publication, has been revived for the purposes of a presentation at a Symposium of the International Society of Traumatology and Orthopedic Surgery to be held at Princeton from August 29 to September 3, 1960. The data, which related to the use of Ca^{45} in the study of the disposition of bone grafts, proved of more general interest with respect to calcium metabolism and kinetics than to the graft problem. A differentiation between the puppies and dogs used in this experiment was easily made on the basis of serum levels of calcium and bone retention of calcium. This work has relevance to the problem of retention of radioactive isotopes in bone. It will be published in its entirety in the Proceedings of the meeting, which will include discussions by twenty panel participants.

3. Cathode Irradiation of Bone

for Sterilization. This procedure developed in this laboratory for use to supplement the sterile operative refrigerated material available for clinical bone grafting, has been in operation now for 5 years with no single failure attributable to the technique of preparation of the graft. Clinical failures of grafting procedure have not been recorded during this period and, therefore, although actual instances of failure of a minor type may have occurred, certainly no major failures are in evidence. It is impossible at the present time to make proper clinical evaluation of the material with relation to the degrees of clinical success, although no evidences of infection or of undue disappearance of grafted materials have been evident. The procedure continues to be taken up by a number of institutions elsewhere in this country and abroad, and one of our former residents now in Athens, Greece, has begun to use the method under our supervision.

4. Foreign Body Study. A precept that foreign material is entirely inert when imbedded in tissues has been the fundamental one in this study. This has been further confirmed and amplified as a result of the work done during the last year in this department and has now achieved general acceptance. Given a large enough surface exposure to tissues, any material will cause appreciable tissue reaction. The preliminary experiments which were described in the previous report, and which concerned weight loss of objects of different metallic composition when placed in different solutions under different gas liquid conditions, have been completed. None of these showed a consequential pattern of corrosion or weight loss and, therefore, these studies have been discontinued. To further the pursuit of the problem of corrosion in metallic implants,

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in vitro studies were devised where such metallic objects were placed under cyclic stress for long periods. This type of experiment was mentioned in the previous report as of a preliminary nature, but in this report the conclusion of several of these experiments have yielded definitive evidence that under these conditions of very slight cyclic stress, certain batches of metal will show marked corrosion, where in static solutions no corrosion was demonstrable. These experiments are now being written up and will be available shortly as a definitive paper.

The study of foreign body reaction in clinical materials which have been removed for one reason or another after implantation principally for fracture treatment, has become one of the principal studies of this laboratory. Over 180 of such devices are under active investigation at the present time. A further report of an instance of metallic failure of this type is being submitted to the *Journal of Bone and Joint Surgery* for publication, and indicates the type of investigations being followed. The author of this report continues his functions with regard to the national needs of the profession with regard to testing, regulation, and evaluation of metallic implants, which is under the supervision of the Bio-Mechanics Committee of the American Academy of Orthopedic Surgery. Active collaboration with the United States Pharmacopeia is being developed in order to bring out some standards for these materials. Official evaluation of failures submitted to the Academy is being done. A course is being given at the Academy Convention every year to provide interested individuals with the details of the problems of metallic implants.

The functions of regulation of implants, principally directed at metallic objects, has been expanded under

the Bio-Mechanics Committee jurisdiction to include plastics. An example of the problems and occupations of this laboratory with this material is evidenced by the recent furor over the clinical results obtained with a polyorithane plastic, commercially obtainable as Ostamer. The author of the present report, then a member of the Orthopedic Research Society Program Committee, was instrumental in having this material evaluated and investigated. The numerous clinical failures which have been encountered have called for much more careful investigative work with such materials before they are released for public use. The manner of control of such release of materials is now under active investigation as indicated above, and it is hoped that the United States Pharmacopeia and/or the Food and Drug Administration will take the first steps toward official requirements concerning labelling, toxicology, etc.

Haversian System Study. This study has been almost entirely in abeyance during the period of this report, owing to the lack of resident help and interest in this subject. However, during the recent months just prior to the above date, a resumption of this study is being begun with the idea of learning about the recruitment of cells during the establishment of new haversian systems. The pressure studies mentioned in the previous report are still considered promising but are not being followed up for lack of personnel.

Muscular Dystrophy. The clinical work pertaining to muscular dystrophy and allied neuro-muscular conditions has progressed about at the same level during this period as previously. The patients who attend the muscular dystrophy clinic have continued to do so. The mechanical advantages provided by the Surgical Appliance Shop

have been extremely helpful and the summer camp facilities, previously instituted by this clinic with the collaboration of one of the muscular dystrophy organizations, has proved immensely beneficial to many patients.

The electromyography service has continued to be rendered to The Children's Hospital and to the Peter Bent Brigham Hospital without charge.

The study of muscle function and weight after removal of several muscles has been completed and is the subject of the report listed below.

A study of the characteristics of the fluid from bone cysts has been completed and published. This study provides data relative to the pathophysiology of cysts and from them a theory of pathogenesis has been suggested.

Miscellany

One case report mentioned in the previous Annual Progress Report has been published as listed below, and another has been submitted to the *Journal of Radiology* for consideration of publication. The activities of this laboratory also include several administrative and professional duties associated with the duties of Dr. Cohen as follows:

1. Committee on Bio-Mechanics and Metallic Implants, American Academy of Orthopedic Surgery.
2. Committee on Pathology, *ibid.*
3. Committee on Scientific Investigation, *ibid.*
4. Chairman, Program Committee, Orthopedic Research Society.
5. Program Committee, Gordon Research Society, Conference on Bones and Teeth.
6. Assistant Editor, *Journal of Bone and Joint Surgery*.

New Work Begun During the Interval Covered by This Report
First, a collaborative study with Dr.

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Giulio J. D'Angio of the Department of Radiology has been begun, comparing the types of disturbance of bone which will be encountered when equal amounts of radiation of X-ray or of cathode ray are administered to rabbits. Second, another investigation of the localized epiphyseal effects of radiation administered to small and to large volumes of tissue around epiphyses has been begun with Dr. Arthur Pappas. Third, an investigation of the effects in tissue culture of small metallic particles has been begun with Dr. Pappas. Fourth, a study of the effects on bone healing of radiation has also been begun. Fifth, a study of the pattern of growth of mouse and rat skulls is being started, in collaboration with Dr. Seymour Zimblér.

THE CHILDREN'S CANCER RESEARCH FOUNDATION

This institution is affiliated with The Children's Hospital Medical Center. It was an outgrowth of the Department of Pathology and most of the members of the staff hold appointments in the Department of Pathology of the Medical Center. The clinical division of the Foundation is affiliated closely with the clinical divisions of the Hospital.

The Foundation laboratories represent a unique development. Their highly specialized facilities and fundamental research programs are available to all members of the staff of the Medical Center. The laboratories are open to medical students and to carefully selected high school and college students for research. The expert staff consists of scientists and medical doctors with training in Physics, Chemistry and Biology. Their activities constitute programs of research which give a particularly broad and stimulating definition to the term "Experimental Pathology."

A complete report of the activities of The Children's Cancer Research Foundation is being prepared by the Foundation. There is included here only brief mention of representative programs. No description is made of the clinical program of care and investigation of leukemia and other forms of disseminated cancer in the young. This was the first program of its kind, and it remains the largest and most complete clinical unit in the field of childhood cancer in the world. More than 450 children at a time, with disseminated cancer, receive new treatments, proved in the laboratories, as part of their total care. The discovery of the first antimetabolite—a chemical agent—for the temporary control of acute leukemia, by Dr. Farber in 1947, marked the beginning of the era of antimetabolite cancer chemotherapy. Many forms of cancer in children have been controlled for months and years, and, in a small number, for as long as twelve years, by chemicals first used here.

There may be mentioned, as an example of this program, a promising development which emanated from the demonstration by Dr. Farber in 1954 of anti-cancer properties of Actinomycin D, an antibiotic discovered by Dr. Selman Waksman, in 1940. In observations made by Dr. Farber and members of his staff, including Dr. Audrey E. Evans and Dr. Anna Mitus, in collaboration with Dr. Giulio J. D'Angio of the Department of Radiology, Actinomycin D was shown to increase the usefulness of small doses of X-ray against the common kidney tumor of children, the Wilms' tumor, even after it had spread to the lungs. The lives of such children have been prolonged up to four years with no evidence of return of the scattered tumors, under a combination of treatment by this antibiotic and

small doses of X-ray. The important contributions of the surgeons, mainly at The Children's Hospital Medical Center, in the surgical treatment of Wilms' tumor, had made possible the survival of more than 40 per cent of children suffering from this tumor. With the addition of chemical treatment to surgery, and radiotherapy from the time of first discovery of the tumor, the survival rate has increased markedly. A careful study of the long-term survival of patients so treated is now under way. It appears that for the first time there is a form of treatment for even widespread Wilms' tumor which has promise of being specific, and perhaps curative. Laboratory studies by Dr. D'Angio of the Department of Radiology and the Foundation, and members of the Foundation staff, including Drs. Charlotte L. Maddock and Alfred H. Handler, are clarifying the mechanism of action of this antibiotic and are outlining the possible fields of further usefulness in patients.

Laboratories of Organic Chemistry, under the direction of Dr. Edward J. Modest. Here a pioneer program in the synthesis of anti-cancer chemicals has been going on since 1958. More than 300 new chemical compounds have been created. Some of these have had scientific interest in the field of infectious disease research and parasitology, as well as cancer.

Laboratory of Enzyme Chemistry, under the direction of Dr. S.-C. J. Fu. Fundamental studies on the mechanism of action of folic acid antagonists, of basic importance in the problem of acute leukemia in children, are in progress.

Laboratories of Polypeptide Chemistry, under the direction of Dr. Elkan R. Blout and Dr. Gerald D. Fasman. This laboratory is concerned with the

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synthesis of large molecular polypeptides of possible importance as plasma expanders. These laboratories have pioneered in the development of artificial materials which may act as artificial enzymes or portions of artificial proteins. This is one of the two great laboratories in the world in this difficult new field of Chemistry.

Laboratories of Pharmacology, under the direction of Dr. Marian F. Narrod. This laboratory is concerned chiefly with the action and toxicity of drugs which are studied by laboratory methods before they are employed in the treatment of patients with disseminated cancer.

Laboratory of Bacterial Metabolism and Cell Biology, under the direction of Dr. George E. Foley. This is one of the first laboratories of this kind, and has participated in the creation of a whole new field of experimental biology. More than 60 kinds of human cancer are grown in bottles in tissue culture. Expert consultation in bacteriology is available to the hospital from this group of experts.

Laboratories of Experimental Biology and Transplantation, under the direction of Dr. Alfred H. Handler and Dr. Richard A. Adams. In this laboratory the pioneer work of Dr. Handler is carried out under ideal conditions for the growth of many types of human cancer in the cheek pouch of the hamster. Fundamental studies on the effect of chemicals under these conditions, and the research concerning causation of cancer represent contributions of major importance.

Laboratories of Mechanism of Bleeding. Here Dr. Isaac Djerassi and Dr. Edmund Klein conduct a large program of research concerning the nature of bleeding in acute leukemia and after destruction of the marrow by

ionizing radiation. They are concerned with a search for methods of protection, prevention, and adequate treatment of massive hemorrhage.

Laboratories of Experimental Hematology, under the direction of Dr. Giuseppe Cardinali. The mechanism of action of chemical compounds on cancer cells is studied to give information of basic importance in the administration of anti-leukemic agents.

Laboratories of Genetics, under the direction of Dr. George Yerganian. These laboratories have acted not only as a research center in the field of animal genetics, but also as a training ground for scientists responsible for a large part of genetic research in this part of the country.

Laboratory of Experimental Pathology and Cytochemistry, under the direction of Dr. Cecilie Leuchtenberger and Dr. Rudolf Leuchtenberger. This has been concerned with the possible role of viruses as causative agents of cancer, as well as with fundamental cell biology.

Laboratory of Experimental Botany, Dr. Carl R. Partanen. Pioneer studies on the nature of cancer produced in fern, yielding information of importance to cancer chemotherapy in man, have been conducted here for the past three years.

Laboratories of Biophysics and Crystallography. Here Dr. Carolyn Cohen, Dr. Donald L. D. Caspar, and Dr. Susan Lowey are conducting studies on the structure of proteins of viruses and the structure of muscle protein, by technics which they are developing as they pursue their fundamental studies in one of the newest and most promising fields of medical science.

Laboratory of Tissue Ultrastructure. Dr. Betty Uzman is continuing her

basic contribution to the study of myelin sheath of the central nervous system, as well as of the peripheral nerves. Her studies have already given the stimulus for a new attack on multiple sclerosis and other diseases of the nervous system.

Laboratories of Experimental Cancer Chemotherapy, under Dr. Charlotte L. Maddock. Our first macrobiological studies of the effect of chemical compounds on cancer are made on the mouse. There is an extensive and expert pioneer program of experimental cancer chemotherapy.

Laboratories of Enzyme Chemistry, under Dr. Morris N. Green and Dr. John T. Clarke. These laboratories work in conjunction with the Clinical Laboratories of Dr. Harry Shwachman, on studies of fundamental importance in the problems of cystic fibrosis.

Laboratories of Immunochemistry, under Dr. Saul Malkiel. This laboratory is concerned with the immunological basis of infectious disease and of certain cancers.

Laboratory of Biochemistry, under Dr. Adele Magasanik. This laboratory has been concerned, for the past nine years, first under Dr. Zelma Miller and then under Dr. Magasanik, with fundamental metabolic studies of basic importance to our knowledge of the normal cell and of the cancer cell.

Laboratory of Lipid Chemistry and Studies of Lipidosis, under Dr. Allen C. Crocker. As part of a therapeutic attack on the problem of incurable disorders of heredito-familial nature, carried out by Dr. Farber and by Dr. Crocker, a Laboratory of Lipid Chemistry has been set up under the immediate direction of Dr. Crocker. Here facilities are available for more complete studies of the nature of these disorders in children than were ever pos-

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sible before. In addition, Dr. Crocker is directing his research to a basic understanding of the abnormal biochemical mechanisms within cells which are responsible for the devastating effect upon the brain and organs of the body in these diseases.

Sidney Farber, M. D.,
Chairman,

Division of Laboratories and Research

Bibliography

DEPARTMENT OF PATHOLOGY

Bernstein, J., *et al.*, Occurrence of intestinal atresia in newborns with meconium ileus. *Am. J. Dis. Child.*, 99:804, 1960.

Cohen, J., Simple bone cysts. *J. Bone & Joint Surg.*, 42-A:609, 1960.

Cohen, J., and Foults, W. S., Failure by corrosion of a Steinman pin. *J. Bone & Joint Surg.*, 42-A:1201, 1960.

Cohen, J., and Maletskos, C. J., Ca⁴⁵ in the study of bone grafts in dogs. In *Proceedings, Symposium of International Society of Traumatology and Orthopedic Surgery*, 1960.

Cohen, J., and Sledge, C. B., Diastematomyelia. *Am. J. Dis. Child.*, 100:257, 1960.

Cohen, J., and Weinfeld, M. S., Experimental excision of muscles in the weanling rat. *J. Bone & Joint Surg.*, 42-A:278, 1960.

Craig, J. M., Effects of time and temperature on the structure and the tinctorial and histochemical reactions of autolyzing tissues. *Am. J. Clin. Path.*, 34:317, 1960.

———, Studies on renal enzymes in a patient with renal tubular acidosis. *Am. J. Med.*, 29:168, 1960.

Farber, S., and Craig, J. M., Healed polyarteritis with aneurysm formation. Clin. path. conf. A. S. Nadas, discussor. *J. Pediat.*, 56:120, 1960.

Farber, S., and Vawter, G. F., (Question) Absence of parathyroid gland. Clin. path. conf. F. X. Fellers, discussor. *J. Pediat.*, 56:690, 1960.

———, Adrenal hemorrhage, retroperitoneal hematoma. Clin. path. conf. M. E. Pendleton, discussor. *J. Pediat.*, 56:308, 1960.

———, Dermatomyositis. Clin. path. conf. C. D. Cook, discussor. *J. Pediat.*, 75:784, 1960.

———, Erythroblastosis fetalis, ker-

nicterus, hemoglobinuric or shock nephrosis. Clin. path. conf. F. H. Allen, Jr., discussor. *J. Pediat.*, 57:281, 1960.

———, Meconium ileus, intrauterine rupture of intestine, obstruction volvulus, acquired atresia. Clin. path. conf. H. Shwachman, discussor. *J. Pediat.*, 56:551, 1960.

———, Nasopharyngeal angiofibroma. Clin. path. conf. G. D'Angio, discussor. *J. Pediat.*, 56:428, 1960.

———, Osteogenesis imperfecta tarda, familial juvenile osteoporosis. Clin. path. conf. A. P. Forbes, discussor. *J. Pediat.*, 57:617, 1960.

———, Pancreatitis with complicating pseudocyst. Clin. path. conf. K. Warren, discussor. *J. Pediat.*, 57:936, 1960.

———, Papillary adenoma of the choroid plexus. Clin. path. conf. R. Paine, discussor. *J. Pediat.*, 56:834, 1960.

———, Thalassemia major, hemosiderosis, benign acute pericarditis. Clin. path. conf. M. Baldini, discussor. *J. Pediat.*, 57:128, 1960.

LABORATORY OF CLINICAL
PATHOLOGY

Clarke, J. T., Colorimetric determination and distribution of urinary creatinine and creatine. *Clin. Chem.* (In press.)

Ghadimi, H., and Shwachman, H., Detection of aminoaciduria in retarded children by a simple, rapid method. In Bowman, P. W., and Mautner, H. V. (Eds.), *Mental Retardation: Proceedings of the First International Medical Conference*. Grune & Stratton, 1960.

———, Evaluation of aminoaciduria in infancy and childhood. *Am. J. Dis. Child.*, 99:457, 1960.

Ghadimi, H., Stern, M., and Shwachman, H., Study of the free amino acids in sweat from patients with

DIVISION OF LABORATORIES AND RESEARCH

- cystic fibrosis. *Am. J. Dis. Child.*, 99:333, 1960.
- Green, M. N., Kulczycki, L. L., and Shwachman, H., Serum protein paper electrophoresis in patients with cystic fibrosis. *Am. J. Dis. Child.*, 100:365, 1960.
- Green, M. N., Riekstnie, E., Valdes-Diaz, O., and Shwachman, H., Elimination of background staining in the periodic acid-Schiff method for protein-bound carbohydrates in paper electrophoresis. *J. Lab. & Clin. Med.*, 55:158, 1960.
- Green, M. N., Yerganian, G., and Meier, H., Elevated alpha serum proteins as a possible genetic marker in spontaneous hereditary diabetes mellitus of the Chinese hamster (*Cricetus griseus*). *Experientia*. (In press.)
- Kulczycki, L. L., Treacher Collins syndrome and mental deficiency. In Bowman, P. W., and Mautner, H. V. (Eds.), *Mental Retardation: Proceedings of the First International Medical Conference*. Grune & Stratton, 1960.
- , MacLeod, K., and Shwachman, H., Survey of school children for cystic fibrosis. *Am. J. Dis. Child.*, 100:174, 1960.
- Reich, P., Shwachman, H., and Craig, J. M., Lycopememia, a variant of carotenemia. *N. E. J. Med.*, 262:263, 1960.
- Shwachman, H., Cystic fibrosis. In *Collier's Encyclopedia*. Collier, 1960.
- , Therapy of cystic fibrosis of the pancreas. *Pediatrics*, 25:155, 1960.
- RESEARCH DIVISION OF INFECTIOUS DISEASES
- Berg, R. B., and Rosenthal, M. S., *In vitro* cultivation of cells from human bone marrow on human amnion cell feeder layers. (In preparation.)
- , Propagation of measles virus in cultures of human and monkey leucocytes. (In preparation.)
- Berkovich, S., Pickering, J. E., and Kibrick S., with the technical assistance of B. W. Bliss. Paralytic poliomyelitis in Massachusetts, 1959. A study of the disease in a well vaccinated population. (In preparation.)
- De Maeyer, E., Plaque formation by measles virus. *Virology*, 11: July, 1960.
- and Enders, J. F., Interferon appearing in cell cultures infected with measles virus. (In preparation.)
- Enders, J. F., Book review: Dubos, R., *Mirage of Health. Perspec. in Biol. & Med.*, III: No. 3, 1960.
- , Comments on the contribution of viruses to biology. Lowell Lecture, Mass. Gen. Hosp., 1958. In *Disease and the Advancement of Basic Science*. Harvard, 1960.
- , Consideration of the mechanisms of resistance to viral infection based on recent studies of the agents of measles and poliomyelitis. *Trans. & Stud., Coll. of Physic. of Philadelphia*, 4 Ser., 28:October, 1960.
- , Katz, S. L., Milovanovic, M. V., and Holloway, A., Development and preparation of the vaccine: technics for assay of effects of vaccination. Studies on an attenuated measles virus vaccine, I. *N. E. J. Med.*, 263:153, 1960.
- Gresser, I., and Enders, J. F., Effect of trypsin on representative myxoviruses. *Virology*. (In press.)
- , Viral cytoplasmic inclusion bodies in dividing human kidney cells infected with croup associated virus. (In preparation.)
- Gresser, I., and Katz, S. L., Isolation of measles virus from urine. *N. E. J. Med.*, 263:452, 1960.
- Katz, S. L., Enders, J. F., and Holloway, A., Clinical, virologic and immunologic effects of vaccine in institutionalized children. Studies on an attenuated measles virus vaccine, II. *N. E. J. Med.*, 263:153, 1960.
- Katz, S. L., Kempe, C. H., Black, F. L., Lepow, M. L., Krugman, S., Haggerty, R. J., and Enders, J. F. General summary and evaluation of the results of vaccination. Studies on an attenuated measles virus vaccine, VIII. *N. E. J. Med.*, 263:153, 1960.
- Katz, S. L., Medearis, D. N., Jr., and Enders, J. F., Some recent advances in varicella and measles. In N. Y. Acad. of Medicine, *Viral Infections of Infancy and Childhood*. Hoeber, 1960.
- Kibrick, S., Viral infections of the fetus and newborn. *Perspectives in Virology II*. (In press.)
- Meadaris, D. N., Jr., Arnold, J. H., and Enders, J. F., Survival of polioviruses at elevated temperatures (60°-75° C). *Proc. Soc. Exper. Biol. & Med.*, 104:419, 1960.
- Mosley, J. W., Dull, H. B., Doege, T. C., and Kuykendall, H. D., Elevations of serum transaminase activities following infectious hepatitis. *Gastroenterology*. (In press.)
- Children's Cancer Research Foundation
- Bioch, E., Cohen, A. I., and Furth, J., Steroid production *in vitro* by normal and adrenal tumor-bearing male mice. *J. Nat. Cancer Inst.*, 24:97, 1960.
- Blout, E. R., Polypeptides and proteins. In Djerassi, C. (Ed.), *Optical Rotatory Dispersion*. McGraw-Hill, 1960.
- , Microspectroscopy. In Weissberger, A. (Ed.), *Physical Methods of Organic Chemistry*, Part II, 3rd ed. Interscience Publishers, 1960.
- , deLoze, C., Bloom, S. M., and Fasman, G. D., Dependence of the conformations of synthetic polypep-

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

- tides on amino acid composition. *J. Am. Chem. Soc.*, 82:3787, 1960.
- Cardinali, G., Cardinali, G., and Agri-foglio, M. F., Colchicine method in the study of bone marrow cell proliferation. *Blood*. (In press.)
- Caspar, D. L. D., Structural stability of tobacco mosaic virus. *Trans. N. Y. Acad. Sci.*, 22:519, 1960.
- Coelho, R. S., Goodman, J. W., and Bowers, M. B., Chemical studies of the satellite cells of the squid giant nerve fiber. *Exp. Cell. Res.*, 20:1, 1960.
- Cohen, J., and D'Angio, G. J., Unusual bone tumors after roentgen therapy of children. Two case reports. *J. Radiol.* (In press.)
- and Holmes, K. C., X-ray evidence for two chain alpha-helical coiled-coils in native muscle. British Biophysical Society. (In press.)
- Cohen, J., Kucera, J., and Lowey, S., Structural studies on uterine myosin. (Preliminary note.) *Biochem. & Biophys.* (In press.)
- Crocker, A. C., Cerebral defect in Tay-Sachs disease and Niemann-Pick disease. *J. Neurochem.* (In press.)
- and Landing, B. H., Symposium on hereditary metabolic diseases. Phosphatase studies in Gaucher's disease. *Metabolism*, 9:341, 1960.
- Djerassi, I., Woodruff, R., and Farber, S., Survival of total-body x-irradiated mice after delayed infusions of isologous bone marrow. *Rad. Res.*, 12:505, 1960.
- Evans, A. E., Clinical uses of bone marrow transfusions. *N. Y. State Med. J.* (In press.)
- Farber, S., Future of the cancer chemotherapy national program. National Cancer Institute. (In press.)
- , New developments in chemotherapy and the care of the patient. American Public Health Association. (In press.)
- and Crocker, A. C., Therapeutic approaches to the lipidoses. Academic Press. (In press.)
- Farber, S., D'Angio, G. J., Evans, A., and Mitus, A., Clinical studies of actinomycin D with special reference to Wilms' tumor in children. *Ann. N. Y. Acad. Sci.*, 89:421, 1960.
- Fasman, G. D., and Blout, E. R., Synthesis and the conformation of poly-L-serine and poly-O-acetyl-L-serine. *J. Am. Chem. Soc.*, 82:2262, 1960.
- Foley, G. E., Drolet, B. P., McCarthy, R. E., Goulet, K. A., Dokos, J. M., and Filler, D. A., Isolation and serial propagation of malignant and normal cell in semi-defined media: origins of CCRF cell lines. *Cancer Res.*, 20:930, 1960.
- Foley, G. E., Friedman, O. M., and Drolet, B. P., Studies on the mechanism of action of cytoxan. Evidence of activation *in vivo* and *in vitro*. (In press.)
- Fu, S.-C. J., "Nitrogen mustard" of the folic acid side chain—para-[N-bis-(chloroethyl)-amino-benzoyl-glutamic acid. *J. Am. Chem. Soc.* (In press.)
- Handler, A. H., Bibliography of tumor transplantation. *Transplant. Bull.*, 26:466, 1960.
- , Adams, R. A., and Farber, S., Further studies on the growth of homologous and heterologous lymphoma and leukemia transplants in Syrian hamsters. *Extrait de Acta Union Internationale Contre Le Cancer*, xvi:1175, 1960.
- Handler, A. H., Magalini, S. I., and Snegireff, S. L., Mortality in chick embryos following implantation of cells and cell fractions of heterologous leukemias. *Trans. Bull.* (In press.)
- Holmes, K. C., and Klug, A., Section through the basal projection of the tobacco mosaic virus particle. *Trans. 5th Cong., Int. Union of Crystallography*. (In press.)
- Karlson, R. H., Norland, K. S., Fasman, G. D., and Blout, E. R., Helical sense of poly-beta-benzyl-L-aspartate. Synthesis and rotatory dispersion of copolymers of beta-benzyl-L-and D-aspartate with gamma-benzyl-L-glutamate. *J. Am. Chem. Soc.*, 82:2268, 1960.
- Karnovsky, M. J., and Fasman, G. D., Histochemical method for distinguishing between side-chain and terminal (alpha-acylamido) carboxyl groups of proteins. *J. Biophys. & Biochem. Cytol.*, 8:319, 1960.
- Katchalski, E., Fasman, G. D., Simons, E., and Blout, E. R., Synthetic histidine-containing polypeptides as catalysts for the hydrolysis of p-nitrophenyl acetate. *Arch. Biochem. Biophys.*, 88:361, 1960.
- Kim, U., and Furth, J., Relation of mammary tumors to mammotropes, I. Induction of mammary tumors in rats. *Proc. Soc. Exp. Biol. & Med.*, 103:640, 1960.
- , Relation of mammary tumors to mammotropes, II. Hormone responsiveness of 3-methylcholanthrene induced mammary carcinomas. *Proc. Soc. Exp. Biol. & Med.*, 103:643, 1960.
- , Relation of mammotropes to mammary tumors, IV. Development of highly hormone dependent mammary tumors. *Proc. Soc. Exp. Biol. & Med.*, 103:490, 1960.
- Kim, V., Furth, J., and Clifton, K. H., Relation of mammary tumors to mammotropes, III. Hormone responsiveness of transplanted mammary tumors. *Proc. Soc. Exp. Biol. & Med.*, 103:646, 1960.
- Kim, V., Clifton, K. H., and Furth, J., Highly inbred line of Wistar rats yielding spontaneous mammo-somatotropic pituitary and other tumors. *J. Nat. Cancer Inst.*, 24:1031, 1960.
- Klug, A., and Casper, D. L. D., Structure of small viruses. In *Advances*

DIVISION OF LABORATORIES AND RESEARCH

- in Virus Research*, Vol. 7. Academic Press, 1960.
- Leuchtenberger, C. L., Relation of the deoxyribosenucleic acid (DNA) of sperm cells to fertility. *J. Dairy Sci.* (Suppl.) 43:31, 1960.
- and Leuchtenberger, R., Quantitative cytochemical studies on the relation of deoxyribonucleic acid of cells to various pathological conditions. *Biochem. Pharm.*, 4:128, 1960.
- , Deoxyribonucleic acid (DNA) variations in neoplastic and virus-infected cells. A cytochemical and cytopathological study. *Cell Physiology of Neoplasia*. University of Texas, 1960.
- Leuchtenberger, C. L., Leuchtenberger, R., Zebrun, W., and Shaffer, P., Correlated histological, cytological and cytochemical study of the tracheobronchial tree and lungs of mice exposed to cigarette smoke, II. *Cancer*, 13:721, 1960.
- Leuchtenberger, R., Leuchtenberger, C., Zebrun, W., and Shaffer, P., Correlated histological, cytological and cytochemical study of the tracheobronchial tree and lungs of mice exposed to cigarette smoke, III. *Cancer*, 13:956, 1960.
- Maddock, C. L., D'Angio, G. J., Farber, S., and Handler, A. H., Biological studies of actinomycin D. *Ann. N. Y. Acad. Sci.*, 89:386, 1960.
- Magasanik, A. K., and Bojarska, A., Enzyme induction and repression by glucose in *Aerobacter aerogenes*. *Biochem. Biophys. Res. Commun.*, 2:77, 1960.
- Meier, H., Diabetes mellitus in animals. *Diabetes*, 9:485, 1960.
- and Brown, B. L., Protective action of irradiated bone marrow cells. *Separatum Experientia*, xvi: 145, 1960.
- , A "runt disease" syndrome associated with immunohemolytic anemia and splenomegaly. *J. Immunol.* (In press.)
- Mitus, A., Leuchtenberger, C., Leuchtenberger, R., and Enders, J. F., Further studies of giant cell pneumonia (abstract). *Am. J. Dis. Child.*, 100:615, 1960.
- Modest, E. J., Foley, G. E., and Farber, S., Derivatives of 2, 4-diaminopyrimidine as growth inhibitors. *Extrait de Acta Union Internationale Contre le Cancer*, xvi:701, 1960.
- Partanen, C. R., Amino acid suppression of radiation-induced tumorization in fern prothalli. *Science*, 131: 926, 1960.
- , Amino acid suppression of radiation-induced tumorization of fern prothalli. *Proc. Nat. Acad. Sci.*, 46:1206, 1960.
- , Endomitosis in a polyploid series of fern prothalli. *J. Heredity*. (In press.)
- Simmons, N. S., and Blout, E. R., Structure of tobacco mosaic virus and its components: ultraviolet optical rotatory dispersion. *Biophys. J.*, 1:55, 1960.
- Steinberg, A. G., Genetics of acute leukemia in children. *Cancer*, 13: 985, 1960.
- Swaffield, M. N., and Foley, G. E., Changes in the cellular content of ribonucleic acid, deoxyribonucleic acid and protein in cultured cells during logarithmic growth. *Arch. Biochem. & Biophys.*, 86:219, 1960.
- Uzman, B. G., and Villegas, G. M., Comparison of nodes of Ranvier in sciatic nerves with node-like structures in optic nerves of the mouse. *J. Biophys. & Biochem. Cytol.*, 7:761, 1960.
- Wetlaufer, D. W., On terminology of protein structure. *J. Am. Chem. Soc.* (In press.)
- and Edsall, J. T., Sedimentation of myosin in urea solutions. *Biochem. Biophys. Acta*, 43:132, 1960.
- White, L. P., Influence of pH on the toxicity of nitrogen mustard. *Science*, 131:1041, 1960.
- , Linden, G., Breslow, L., and Harzfeld, L., Studies on melanoma, III. Effect of pregnancy on survival in human melanoma. *J.A.M.A.* (In press.)
- Yerganian, G., "Brittle-bristle": a sex-limited factor affecting only the female Chinese hamster, *Cricetulus griseus*. *J. Heredity*. (In press.)
- , Chromosomes of the Chinese hamster, *Cricetulus griseus*, 1. The normal complement and identification of sex chromosomes. *Int. J. Cytol.* (In press.)
- , Cytogenetic analysis with reference to somatic cell genetics *in vitro*. Genetics Study Section and Division of General Medical Sciences, National Institutes of Health. (In press.)
- , Radiation effects on mammalian sex chromosomes. *Rad. Res.*, 12:185, 1960.
- , Farber, S., and Gagnon, H., Spontaneous hereditary diabetes mellitus in the Chinese hamster (*Cricetulus griseus*), IV. Probable inheritance pattern and the onset of symptoms. *Diabetes*. (In press.)
- Yerganian, G., Kato, R., Leonard, M. J., Gagnon, H. J., and Grodzins, L. A., Sex chromosomes in malignancy, transplantability of growths, and aberrant sex determination. *In Cell Physiology of Neoplasia*. University of Texas, 1960.
- Yerganian, G., Leonard, M. J., and Gagnon, H. J., Chromosomes of the Chinese hamster, *Cricetulus griseus*, II. Onset of malignant transformation *in vitro* and the appearance of the x₁-chromosome. *Pathol. et Biol.* (In press.)

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

Abstracts of Papers Presented at Meetings

American Society for Experimental Pathology—April 1960.

Leuchtenberger, C., Stewart, S., Leuchtenberger, R., and Eddy, B., Correlated microscopic and microspectrophotometric studies of DNA of tissues from mice and hamsters infected with polyoma virus.

Maddock, C. L., Brown, B., D'Angio, G. J., and Tedeschi, C., Histological studies of potentiation of x-ray effects by actinomycin D on skin of normal mice.

McCarthy, R. E., Modification of the homograft response in mice by ascites.

Narrod, M. F., Some pharmacological studies of aglutamic acid-lysine copolymer.

Wetlaufer, D. B., Degradation and reactivity of myosin in urea solutions.

White, L. P., On the prevention of toxicity of nitrogen mustard.

American Association for Cancer Research—April 1960.

D'Angio, G. J., and Brown, B., Potentiation of x-ray effects on normal mouse skin by actinomycin D.

Foley, G. E., Friedman, O. M., and Drolet, B. P., Studies on the mechanism of action by cytoxan, I., Evidence of activation *in vivo*.

Handler, A. H., and Cohen, J., A transplantable ascites sarcoma in the Syrian hamster.

Kato, R., Yerganian, G., Grodzins, L. A., and Stewart, S., Sex chromosomes and transplantability (*in vivo*) of polyoma-induced sarcomas in the Chinese hamster.

Kim, U., and Furth, J., Role of mammotropic hormone in induction and growth of mammary tumors by 3-methylcholanthrene.

Maddock, C. L., Brown, B., and

D'Angio, G. J., Enhanced response of Ridgway's osteogenic sarcoma to x-irradiation combined with actinomycin D.

Tsukada, H., Kaneko, A. I., Onoe, T., and Fu, S.-C. J., Comparative studies on respiratory metabolism of sensitive (4N) and nitromin-resistant Ehrlich ascites tumor cells.

White, L. P., Anti-tumor activity of non-toxic preparations of HN2.

American Association of Pathologists and Bacteriologists—April 1960.

Yerganian, G., Green, M. N., and Meier, H., Spontaneous hereditary diabetes mellitus in the Chinese hamster: pathologic, biochemical, and genetic findings.

VIIIth Congress, International Society of Blood Transfusion—September 1960.

Djerassi, I., Farber, S., Evans, A., and Yoshimura, H., Observations on transfusions of fresh human platelet concentrates.

Yoshimura, H., and Djerassi, I., Studies on the hemorrhagic tendency in heparin-treated animals.

VIIIth Congress, International Society of Hematology—September 1960.

Djerassi, I., Yoshimura, H., and Roy, A., Effects of soybean phosphatides on bleeding in thrombocytopenic rats and dogs.

Roy, A., Yoshimura, H., and Djerassi, I., Hemostatic effects of heterologous platelets in thrombocytopenic rats.

Yoshimura, H., and Djerassi, I., Observations on oxygen uptake by human platelets.

Tokyo Symposium on Cancer Chemotherapy—October 1960.

Farber, S., Current clinical and experimental studies in cancer chemotherapy.

American Chemical Society—September 1960.

Fu, S.-C. J., "Nitrogen mustard" of the folic acid side chain—N-bis (chloro-

ethyl)-p-amino benzoyl-glutamic acid.

Chatterjee, S., DuBois, E. P., and Modest, E. J., Synthesis of 4, 5-pentamethylenepyrimidines as potential growth inhibitors.

Lemlein, S. A., Chatterjee, S., Foley, G. E., and Modest, E. J., Growth inhibition studies with selected 6, 7-disubstituted pteridines.

Modest, E. J., Chatterjee, S., Lemlein, S. A., and Brun, D. M., Synthesis of certain 4-mercaptopyrimidine derivatives.

DEPARTMENT OF OTOLARYNGOLOGY

DEPARTMENT OF OTOLARYNGOLOGY

This is a brief report on the activities of the Otolaryngology (Ear, Nose and Throat) Service for 1960. During this year our patient load continued to remain high on the in-patient service insofar as admission and operations were concerned. However, despite this an economic and nursing problem was created for the hospital since most of these patients were in for throat operations (tonsillectomy and adenoidectomy) and remained in the hospital for less than 30 hours. A word of explanation for this situation might be in order. A "T. & A." is an elective operation performed on a well child and in most instances requires very little in the way of a hospital workup, the patients having been previously examined by at least two doctors before admission was decided upon. The average age of these patients is about 5½ years. Admission to the hospital occurs early on the morning of operation and the child is escorted to the ward in company with one or both parents who remain with the patient until he or she is removed to the operating room under sedation, usually asleep. Except in most unusual circumstances the patient is well enough to be discharged home the following day. This method of handling children for T. & A. has been used here for the past 25 years and may be said to have stood the test of time. It has several points, unrelated to cost, which appeal strongly to parents. Among these may be mentioned that admission occurs at a stated time on the day of operation, the parents are encouraged to stay with the child until removal to the operating room, while on the ward they meet the nurses and doctors who give postoperative care and see the kindly and efficient manner in which the children are treated. As a result many parents express their appreciation directly or by letter for the high

quality of care received, while complaints are few and far between. It is hoped that some solution to the economic and nursing problem can be arrived at which will permit us to continue to handle these patients as we do now.

Advances in middle ear surgery during the past five years or so have enabled us to salvage the hearing function and repair certain defects in this area which previously could not be helped at all, or which had to be treated by obliterative procedures. Many perforated eardrums can now be closed, in certain patients, by the use of vein grafts or very thin skin grafts, usually with improvement in hearing. In some patients with chronic mastoid disease and destruction of the eardrum, removal of the diseased bone and other tissues followed by skin grafting can result in a "dry" ear and sometimes a substantial improvement in hearing. Much of this work has to be carried out while the surgeon observes through an operating microscope which magnifies from 6 to 40 diameters. Our microscope, donated to us by the Women's Committee four years ago, has been put to good use and will undoubtedly be even more widely used in the future as new techniques are evolved.

Our affiliated Resident Training Program with the Massachusetts Eye and Ear Infirmary has worked out very well over the past three years and should continue to provide a period of concentrated experience in children's otolaryngology for the Eye and Ear Residents in their third year of specialty training. Each resident spends three months with us and is kept busy with out-patient work, operating, staff consultations, and other hospital activities. The advantages to the hospital of staff coverage by a young man with a training background of at least

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

two years in a specialty are too evident to need amplification. Continuation of this relationship should be encouraged in every way. Much of the work of the resident is carried out in the out-patient department and one of our pressing needs is better out-patient facilities so that more than one doctor at a time has a place in which to examine patients. Some of our patients have to wait two or three hours to be seen. At the present time the out-patient clinic is a one-man operation.

The Otolaryngology Department exists as a separate unit with its own operating suite and ward (Division 14) housed in Building A some distance from the other clinical services. The ward and operating facilities are used almost exclusively by this service with the exception of an occasional eye patient. While this physical setup has obvious merits it also has serious drawbacks not the least of which is the expense of maintaining and staffing the area, particularly the operating suite. In future planning for the clinical services serious thought should be given to the integration of the Otolaryngology Department with the other services dealing with the medical and surgical problems of children, if any significant improvement in the cost of this operation is to be attained.

cerned with the teaching of pre-school deaf children. At the present time this unit has a staff of three teachers of the deaf and a social worker in addition to the part-time services of a psychologist. This group is currently engaged in teaching 45 or more severely deafened pre-school children who are able to hear, if at all, only with the help of a powerful hearing aid. Patients come to this clinic not only from New England but from all over the United States and Canada. We have also had patients from as far away as Greece and Iran for diagnostic study. Part of the clinic is housed on the opposite side of Longwood Avenue from the hospital and part of it on the third floor of the Administration Building. In neither place are the facilities or space adequate for the job we are called upon to do and here again our patients must wait, sometimes a matter of weeks, to be seen.

Carlyle G. Flake, M.D.
Otolaryngologist-in-Chief

HEARING AND SPEECH CLINIC

Under the direction of Adam J. Sorcini, Ed.D., this clinic has increased in size and importance, year by year, since 1952 when it was started with a staff of one, to 1960 when it had a staff of fourteen and 10,766 patient visits. Among other distinctions, it has the highest patient load of any clinic of its kind devoted to children in the world (with the possible exception of Russia). An important affiliated unit of this clinic, The Sarah Fuller Foundation, is primarily con-

DEPARTMENT OF DENTISTRY

DEPARTMENT OF DENTISTRY

The activities of the Department of Dentistry have continued to expand and diversify since my last report. The demand for clinical care of patients who need the special facilities provided in our Hospital or who are the responsibility of the Hospital continues at a high level. Thus we have had an abundance of clinical teaching material at all levels of training, but time available to the permanent staff for individual research efforts has been less than optimum.

Despite the heavy patient load, the Department has contributed significantly to the teaching program at the Harvard School of Dental Medicine. In addition to being responsible for the undergraduate teaching of pedodontics and orthodontics at the School, our permanent staff members were sponsors for no less than four undergraduate research projects this year in a class of thirteen students. One graduate student completed his three-year postdoctoral fellowship in June, 1960, having received his clinical training in orthodontics in our Department. Two new students were enrolled in September.

The Department, in addition to giving numerous lectures and clinics, figured prominently in the affairs of the Massachusetts Dental Society this past year. Three members of our staff served as chairmen of the Educational Program in January, and the pedodontic and orthodontic sections of the State meeting in May.

Having two interns in pedodontics has strengthened the service and their training appreciably. The house officers find themselves less harassed and have more time for study and mutual exchange of ideas and clinical experiences.

This summer a Panorex X-ray unit was installed in our Department, one of twenty-five such units available

in the country. This machine makes it possible to produce an image of all the teeth on a single film. We have explored the research possibilities of the technique, and a report on its application is in preparation. These X-rays are particularly helpful for delineation of gross lesions and have been of service to many departments of the Hospital.

A new accounting system has been set up for the Department through the cooperation of Mr. Held. We are hopeful that the financial status of the Department will show a justification for a moderate increase in salaries for non-professional personnel. At the present time we have two positions open that we have been unable to fill at the current wage scale.

In 1961, our research manpower will be strengthened by a capable young man whose knowledge of salivary chemistry and nutrition is already well documented. He will divide his time between the Hospital and the Harvard School of Dental Medicine, where he will also continue his research with Dr. James H. Shaw, Associate Professor of Biochemistry.

Although our quarters can no longer be called strictly new, I consider them new and am pleased to report that they are and have been kept in excellent condition by the Maintenance and Housekeeping Departments responsible.

Paul K. Losch, D.D.S.
Dentist-in-Chief

REPORTS OF CHIEFS OF THE MEDICAL SERVICES

OPHTHALMOLOGY
DEPARTMENT

The Ophthalmology Department has continued to provide consultation service to all units of The Children's Hospital Medical Center, including the Children's Cancer Research Foundation, The House of the Good Samaritan, and the Children's Mission to Children, etc. With Dr. Harry Shwachman's cooperation, the Department is carrying out an ophthalmologic survey of patients with cystic fibrosis. The Department is also participating in a study relating to congenital anomalies. While no actual tally of the number of consultations has been kept, they average about three per week, but vary from none to seven per week. The Department could probably function more effectively if it were provided with some sort of examining room, were it ever so humble. We look forward to the possibility of having a Fellow in Ophthalmology in residence and beyond this to the eventual re-establishment of the Eye Clinic.

Trygve Gunderson, M.D.
Ophthalmologist-in-Chief

Bibliography

- Gundersen, T., Cornea and sclera: injuries and diseases. In *Traumatic Medicine and Surgery for the Attorney*, Vol. 4. Butterworth. (In press.)
- , Surgical treatment of bullous keratopathy. *Arch. Ophthalmol.*, 64: 260, 1960.
- and Liebman, S. D., Relationship to systemic disease. In Sanders, T. E. (Ed.), *Pediatric Ophthalmology*. Mosby. (In press.)

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THE CHANGING FACE OF ADMINISTRATION

The administrative departments underwent the following changes in 1960:

Mr. Greer Williams in March succeeded Mr. A. William Smith, Director of Resources, but, as Assistant Director in charge of development and public relations, Mr. Williams acquired the additional responsibilities of supervising and coordinating the Departments of Fund Raising and Public Information.

Mr. Smith remained with the Hospital to spearhead the organization of the Cooperative Hospital Laundry, an enterprise which he initiated to provide laundry services for at least five major hospitals.

Mrs. Harriet H. Gibney in June became Director of Public Information, succeeding Mrs. Shirley Van Cleef, who resigned.

Mr. John Glancy in June became Director of the Surgical Brace and Appliance Shop, succeeding Mr. Edward Roberts, who retired.

Mr. Richard E. Held became Comptroller in August, succeeding Mr. Edward S. Lancaster, who retired.

Mr. Alexander T. Brown became Director of Personnel in October, succeeding Miss Adeline Morrill, who retired.

Mr. George D. Nicoll, for ten years carpenter foreman, in October became Director of an entirely new department, Special Services.

Miss Marion W. Hall, Director of Social Services, retired in October after twenty years of service. Her final report appears elsewhere in this document. She died on March 24, 1961.

REPORTS OF ADMINISTRATIVE DEPARTMENTS

NURSING SERVICE AND SCHOOL OF NURSING

NURSING SERVICE

There are features of hospital nursing services which are not common to all enterprises and which make for difficulties in planning and operation.

One feature is that the nature and extent of the task to be done is unpredictable and never under the control of those charged with the responsibility to carry it out. Another is that the task must be carried on seven days a week, twenty-four hours a day. These facts are so obvious that they tend to be taken for granted, yet they underlie the gravest problems with which the nursing department must attempt to cope. That these characteristics are not unique to nursing is also true, for other departments face the same problems though in a lesser degree.

Unpredictability stems not only from the emergency nature of much hospital work but also results from other causes not as readily apparent. For example, patient population rises and falls as illness in the community increases or declines; it is likely to be low during the holiday periods and high in the early summer when much elective surgery is to be done. Some of these can be anticipated with a certain assurance although patterns change from year to year. More irregular are the individual plans of members of the medical staff; a week-long meeting of surgeons or pediatricians may alter the work load markedly as also may the fact that a large number of physicians take their vacations at the same time.

As a consequence the work load is unevenly distributed with quite a considerable range between the low and the high. In 1959-60 for example the monthly average of patients showed a low of 230 in December and September and a high of 285 in June, or an increase of fifty-five patients on the average in the latter month, almost

25 per cent more than in the other two. Similarly operations ranged from 398 in September to 577 in June, an increase of nearly 45 per cent.

Such deviations pose a crucial question: does one attempt to staff for the peaks or try to strike an average? The problem remains even if a group of temporary workers could be drawn upon to meet a sudden need. This is unlikely to be the case at any time for most nurses who work desire regular employment; others who might be available as temporary auxiliary workers require too much training to be useful on a short term basis.

An unfortunate aspect of these variations, even when they can be anticipated, is the inability of the nursing service to relate work load to availability of staff. For example, peaks in June or July are extraordinarily difficult to meet since many nurses leave the staff in the early summer and vacations must be given during this time. Thus there are likely to be periods when nursing cannot provide enough care for patients, employees work overtime and many frustrations develop.

It is probable that there is no complete remedy for the situation since so many different factors and people are involved: it is possible however that joint planning and more exchange of information might mitigate some of the worst aspects.

The twenty-four-hour nature of the job presents the nursing staff with other serious problems. In these days of plentiful employment opportunities it is most difficult to find persons who are willing to work weekends and nights. These periods are not popular with any but a small proportion of the population; they are intensely disliked by most young women, the group upon which nursing services must rely for the most part. Intense pres-

REPORTS OF ADMINISTRATIVE DEPARTMENTS

sure upon employees to work at these times tends to result in absenteeism or even withdrawal from the job. While resistance to working at these hours has been increasing, the need for staff at such times has mounted rapidly. More emergency and late admissions, more work done by residents during the evening hours, a higher proportion of critically ill patients and a decline in availability of student nurses have all combined to produce this need.

While nursing service does not control the scope of the task which it must do, it has the added problem of being dependent to a great extent upon supporting services from other departments, departments over which it has (and should have) no jurisdiction. In too many instances nursing is responsible for work which might better be done by these departments or is obliged during night and weekend hours to take on jobs which are done elsewhere during weekdays. This may be because the work load is too small to warrant twenty-four-hour coverage in the other department or it may result from another department's difficulty in obtaining staff at these awkward times. Whatever the reason, the result often is added work for nursing service which must always be at hand to meet its commitment as best it may. Examples of this peculiar situation, both in this hospital and in others, are too obvious and frequent to need to be cited.

Lest these comments be interpreted as indicating a wish to unload work onto other hospital departments perhaps a word of explanation is in order. There is an historical background for the situation which persists to some extent in this institution today and was common to all hospitals until recently.

Because nursing at one time was

responsible for many of the activities now allocated to dietary, housekeeping, laundry, etc., it had a difficult time to get transferred to these new departments many of the responsibilities which are appropriate to them. And because nursing was always here at night, it was never able to relinquish some tasks which properly are not nursing at all.

Aside from the fact that much of the work referred to is more appropriate to another department, it is also obvious that it is costly to use the time of registered nurses to do jobs for which little training is required and which can be done in many instances by a person whose wages are less. Fortunately many gains have been made in regard to this problem; doubtless more will be as time goes on.

In recent years change appears to be the only constant in hospitals; change affects nursing in a number of ways. One of these is the development of new methods of treatment which require new learning for the nurse; as the physician introduces new therapies, he sometimes turns over to the nurse responsibilities which he formerly assumed. A good example is the administration of medication by the intravenous route, a procedure formerly done by the residents, now the responsibility of the graduate nurses. This change alone, adopted in 1959, has created a need for more nurses as the increasing use of the method consumes many hours of their time each day.

Another change, evident in the past decade in particular, is the short stay of most patients. This trend, so advantageous to the patients, has posed considerable problems for the hospital and affects many departments. In nursing it has a tendency to make management of the division more

complicated for paper work multiplies and supervision of patient care is difficult when there are so many new children each day. Doubtless it contributes, too, to the nurse's lack of satisfaction in her job as she becomes less acquainted with her patients and less able to feel joy and pride in the progress of children well known to her.

Finally, changes in personnel make stabilization of the service exceedingly difficult; orientation and training programs help but they cannot entirely substitute for longer employment and the familiarity with departmental needs which comes from experience. The operating room provides an excellent example; there it has been accepted that the first six months of a nurse's employment is largely orientation; if she leaves at the end of the first year the productive period is very brief.

Changes in staff have been a serious problem during the year as they have been in the past. Figures which show a high rate of turnover quite properly give rise to concern, yet such figures can be most misleading if not examined with care.

During the past year ninety-five graduate nurses were newly employed and ninety-seven terminated; these numbers represent more than half the total number of such persons usually employed.

Analysis of the ninety-seven shows the following, however: fourteen persons came for specified temporary employment; twelve were foreign nurses under the exchange visitor program in which the usual plan is for a six-month experience. If these are excluded from the total we find that the turnover figure is 48 per cent, still high but slightly lower than in 1958-59. Moreover, of the entire group we find that approxi-

REPORTS OF ADMINISTRATIVE DEPARTMENTS

mately two-thirds left because of compelling personal circumstances. The balance is twenty-two persons, or 31 per cent of the total who left this institution, who went to other positions. Three of these had been employed less than a year; the average length of stay for the twenty-two was two years; six had been here for three or more years.

If these twenty-two registered nurses who left the staff for unknown reasons, perhaps including dissatisfaction, represent the true turnover then the percentage is 12.4 per cent—considerably lower than that given above. Yet this analysis affords little comfort for it becomes clear that relatively little can be done to alter the rapid change in staff; more effective ways to carry on nursing service under such conditions should be the primary objective.

Turning to the other groups in nursing service, the aides, orderlies and clerks, one finds a different picture and one in need of vigorous methods to bring about improvement.

Here we find that well over 100 persons came and went during 1959-60. Approximately one-fifth were summer employees but exclusive of this temporary group the turnover figures are as follows: aides, 77 per cent; orderlies 100 per cent; clerks 138 per cent. These are much higher than for the previous year, in some cases nearly double, and unquestionably reflect job dissatisfaction.

Figures do not show to what extent personal reasons contributed to termination but in many instances this doubtless was a factor. Yet it appears probable that the chief element has been the wage scale which, until the new rates became effective October 1, 1960, had not been increased since the spring of 1957. Until the new scale has been in effect

for a few months it will be difficult to determine whether or not other factors also play a large part in this distressing state of affairs.

Terminal interviews conducted by the personnel department might be helpful in such an analysis. It is imperative that this situation be improved if nursing service is to approach a satisfactory equilibrium and the expense of turnover to be reduced. Unfortunately it is not known what the actual cost of hiring and training a new employee may be; it is known that industry considers high turnover a dangerously expensive matter.

The auxiliary worker is of importance to nursing service as she should assume duties for which she is prepared and thus assist the registered nurses who always are in short supply. Moreover, as educational programs for student nurses increasingly reduce the students' availability, the auxiliary workers become essential to fill part of the gap.

Another group, the licensed practical nurses, is playing an increasingly important role in patient care; it is pleasant to report that we employed last year more of these nurses than at any time in the past. While the number remains relatively small and is less than half that felt to be needed, there is now reasonable hope that the desired number may eventually be secured.

Efforts at reorganization of the service, begun several years ago, in order to involve more members in the work of the entire department and in improvement of patient care as well as to bring groups with common interests together to study and attempt to solve their problems, have begun to bear fruit. Committees working on procedures, records and educational and training programs have been active and productive. Unfortunately

committee work takes time but it is only through such groups that much of the work of a large and diversified department can be accomplished.

Mrs. Marion Stewart joined the education department of the nursing service as instructor of auxiliary workers. For much of the year she was obliged to supervise the House of the Good Samaritan but with the appointment during the summer of Miss Margaret Francis as supervisor on the convalescent divisions and the respirator unit, Mrs. Stewart was freed to give more time to her task of training and will in the coming year be able to develop this program better to meet current needs.

All the changes in personnel mentioned earlier place a great responsibility on the education department. There are three persons at present; a fourth has been requested for the coming year to have as her principal responsibility the instruction of nurses in the care of patients having cardiovascular surgery.

In addition to a continuing program of instruction this department assumes responsibility for early orientation of new staff members and arrangements for the many visitors who come to the hospital. The number of new nurses employed in 1960 gives an indication of the size of the task; visitors too continue to increase in number so that last year the department made plans for and met with seventy-two persons or groups.

Miss Francis, now supervisor in the House of the Good Samaritan, previously was assistant to the orthopedic supervisor, Miss Gassman, and thus comes to the new position possessing a familiarity with the respirator unit which is exceedingly helpful.

Miss Jeanne Colt, surgical supervisor, was on leave of absence for study throughout the year, returning

REPORTS OF ADMINISTRATIVE DEPARTMENTS

early in September. Mrs. Ann Lennihan came from the Out-Patient Department to assume Miss Colt's supervisory duties temporarily. She has now returned to the Out-Patient Department as assistant supervisor.

During the summer of 1960, staff vacancies necessitated the closing of the Medical Emergency Clinic during the evenings. Until the fall of 1958 one emergency clinic, surgical, had cared for all patients during evening hours. In that year the second clinic was opened because of the increase in emergency visits which totaled about 700 between 1957 and 1958. Between 1958 and 1960 a phenomenal rise of 5,700 in such visits occurred, most of them in the evening hours, hence the closure of one evening clinic caused a serious situation.

Not many years ago the nature of the emergency service was such that nurses with relatively little experience in the department would meet the situation if necessary; today this is no longer true and the nurses who assume this responsibility must have a considerable period of indoctrination. When a number of persons left the staff during the summer there were not enough qualified persons available for these hours.

Staffing the two clinics is costly for the hospital but with the present physical arrangements no other solution is possible. With sufficient space suitably planned to meet the needs of all emergency patients one clinic should meet the need effectively and at less cost.

The operating room is another department in which experience of staff is of the greatest importance; when vacancies occur the replacement must often be by a nurse without sufficient experience to permit her to carry a full share of responsibility. Resignations in the spring, therefore,

presage difficulty in the ensuing months when work load is high and staff must have vacation.

The number of operations in 1960 exceeded slightly the total for recent years; the total is, however, of less significance than the nature of the surgery and the fluctuations in work load from month to month or even from day to day.

Day-to-day planning has been improved this past year by an arrangement which gives the supervisor more responsibility for scheduling operations and by cooperation between the Admitting Department and the Operating Room in the bookings.

The additional space allotted to Central Supply this year, as a consequence of the closing of the old Blood Bank, has been of great value. It will not be used to the best advantage, however, until certain structural changes have been made; the plan for these is dependent to some extent upon the decision to be made regarding purchase of solutions for intravenous therapy.

The hospital has been fortunate to have had senior supervisors on the evening and night service who have held those positions for a long time. Not only are the hours difficult ones but the responsibilities which these persons must assume are onerous so that suitable nurses are not easy to find. The less experienced assistant supervisors have changed more frequently; this year a number of appointments were made: Mrs. Ann Holst Clark became assistant evening supervisor; Miss Jacqueline Patterson was appointed night assistant supervisor; Miss Joan Bodman, formerly employed as an assistant head nurse, returned to the evening service.

It is not possible to mention individually the many persons whose services to the hospital were termi-

nated, nor the many new appointments which have been made. The many devoted persons who have been unstinting in their efforts to give good care to children, all deserve high praise.

The department has been involved in two new projects this year, both interesting and both time-consuming. The first is a study of the cost of running the School of Nursing, a study which is part of a nation-wide project of the National League for Nursing. This is of course primarily a school undertaking but all head nurses and supervisors in departments to which students are assigned have had a part as well. Secondly, the new cost accounting system and the new methods of budgeting instituted at the beginning of the year have taken time of members of the supervisory and administrative staff. The knowledge gained from this experience, however, has been of value in developing increasing awareness of the expense of each unit.

The department has reason to be grateful to the Volunteer Department for the help rendered, especially during the day in transportation of patients. Evening volunteers, while less numerous than last year, have given about 2,000 hours to the care of patients.

Attached to this report is a summary of the number of employees requested for the department in the 1961 budget.

AUTHORIZED POSITIONS
Budget Requests 1961
PROFESSIONAL NURSES

| | |
|---------------------|-------|
| Director | 1/2 |
| Associate Director | 1/2 |
| Assistant Directors | 3 1/2 |
| Supervisors | 10 |
| Asst. Supervisors | 6 |
| Head Nurses | 28 |

REPORTS OF ADMINISTRATIVE DEPARTMENTS

| | | |
|---------------------------|-----|------|
| Asst. Head Nurses | 21 | |
| Staff Nurses | 137 | |
| Director, Education | 1 | |
| Instructors | 2½ | 210 |
| LICENSED PRACTICAL NURSES | | 49 |
| AUXILIARY WORKERS | | |
| Aides | 93½ | |
| Orderlies | 15½ | |
| Div. Clerks | 18½ | |
| Ward Manager | 2 | 129½ |
| SECRETARIAL AND CLERICAL | | |
| Secretaries | 2 | |
| Clerk-typist | 3 | |
| Clerk | ½ | 5½ |
| Total | | 394 |

SCHOOL OF NURSING

In September a new class of forty-five students of nursing entered the school; of these thirty-three live in Massachusetts, nine come from the other New England states, and one each from New Jersey, North Carolina and Ohio.

The Admissions Committee continues to select the class from approximately 200 applications, of which some are from individuals who have applied to more than one school and may not have this as the first choice. Last year the committee reviewed 187 records; approximately the same number of individuals were interviewed and taken around the hospital and Gardner House.

The institution of an application fee in 1959 seems not to have altered significantly the number of applications filed, except to reduce the number received from persons not serious about entering the school; the number of incomplete applications dropped from about sixty in 1958 to sixteen in 1960. Since the processing of applications is a time-consuming and costly task, this reduction is most welcome.

The committee has been accept-

ing approximately three students for each two who enter the school; in other words, one in three changes her plans after filing application.

At the close of the year 1960, the school of nursing was smaller than at the same time last year due to a higher withdrawal rate than is usual. Most of the students left because they were not successful in passing the courses in the first year.

There were thirty-two members in the graduating class, for whom exercises were held at the Temple Israel on September 18. The speaker on this occasion was Dr. Ernest Caverly, Superintendent of Schools in Brookline.

Fourteen of the thirty-two joined the staff at the hospital, a somewhat lower number than in most years. At least seven of the graduates had plans to marry and to live elsewhere than in Boston.

Two members of The Children's Hospital faculty are on leave of absence this year for study. One of these is the instructor in orthopedic nursing, Miss Ann Noon, whom it has not been possible to replace; the other, Miss Margaret Heafey, is away for one semester. The vacancy created by the resignation of the instructor in public health nursing in June has not as yet been filled. Miss Phyllis Diegoli, instructor in surgical nursing, left the staff in order to do graduate study.

The following faculty members have been appointed: Miss Jean Crocker, The Children's Hospital School of Nursing, teaching assistant; Miss Carmel DiNicolantonio, St. Elizabeth's Hospital School of Nursing, Youngstown, Ohio, and B.S., St. Louis University, instructor in surgical nursing; Miss Joan Grindley, Catherine Laboure School of Nursing and B.S., Boston College School of Nursing, junior instructor in fundamentals of nursing.

At the annual meeting in 1959 the Women's Committee voted to give approximately \$1,200.00 for the Scholarship Fund, thus increasing that fund to a total of \$5,333.20. The Alumnae Association of the School of Nursing also contributes a sizable sum each year for scholarships.

During the past year eleven scholarships have been awarded; these usually are for \$100.00.

The Alumnae Association also sent a student to the National Convention of the Student Nurses' Association in the spring of 1960.

Following the reorganization of the Medical Center and the adoption of the new name, there was discussion in the Faculty and in the School of Nursing Committee about the name of the school. Thus far no change has been made, and the school continues under its old title until a decision is reached by the Board of Trustees.

Affiliate Program

There have been faculty changes in the affiliate program. Miss Amy Nurse, the chairman, resigned at the close of the year because of illness. No appointment has been made of a new chairman. Miss Diana Misenti, one of the instructors in the program, is on leave of absence during 1960-61 for study. Mrs. Margaret Crooker and Miss Patricia Walsh also left the staff during the year.

Three new appointments have been made to this program: Miss Rita Bryant, Boston City Hospital School of Nursing and M.S., Boston College; Miss Nancy Parker, The Children's Hospital School of Nursing and B.S., Boston University, and Miss Helene Marsh, B.S., Boston College School of Nursing.

There are nineteen affiliated schools, all but two of which send students throughout the year. The school

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was notified in the spring that the Roger Williams General Hospital School of Nursing in Providence, Rhode Island, wished to terminate the affiliation in October because it was ready to present a program in pediatric nursing in the home school.

This withdrawal of a school of moderate size reduces slightly the number of students entering here but it is rather unlikely that an application from another school will be accepted immediately since the number of students in the last several years has seemed to be larger than desirable in relation to the facilities, housing and available faculty.

In 1959-60 the total number of students entering the program was 587. Plans for 1960-61 are for 522 students.

In the fall of 1961, the total number of days of evening and night duty will be reduced five per student in the twelve-week period. Also contemplated in the near future is a change in instruction in formula preparation. The Approving Authority for Schools of Nursing has given tentative approval to a plan which will eliminate the present requirement that students spend two days preparing formulas for infants. Other instruction and experience will be substituted.

College Program

Miss Leona Stapleton, one of the instructors in the program for these students, transferred to the nursing service as a head nurse early in 1960. She was replaced by Miss Marie Cullinane, a graduate of Boston College School of Nursing, and M.S., Catholic University in Washington.

During the year seventy-seven students have come from the colleges to complete the twelve-week experience.

Miss Mary Young, the librarian,

resigned in the early summer; fortunately, it was possible to appoint in her place Miss Jutta Luhde, a graduate of the Simmons College School of Library Science. Miss Luhde is the first full-time librarian the school has had.

In recent years the acute housing situation has been reported upon frequently; at times it was feared that the school would not be able to accommodate all the students for whom arrangements had been made. During this year there has been an easing of this situation with an average of 208 in residence. It is hoped that at some date not too far distance the two floors at 329 Longwood Avenue now occupied by students may be reclaimed for staff housing. The arrangement at 329 is not a satisfactory one since relatively few individuals are housed, most rooms are not single and the cost of maintaining a residence of this type is excessive.

This year the school has become involved in a study of the cost of nursing education which should provide very helpful information for the school and the hospital. The rising cost of education is of concern in all fields because of the difficulty in finding funds. Hospital nursing schools are in a particularly difficult situation since increase in cost of running the school is eventually reflected in charges to patients. It is, therefore, cause for satisfaction that we may hope eventually to have some accurate figures which may be compared with similar studies done in as many as 200 schools of nursing throughout the country. This is a project of the National League for Nursing.

The school has cause to be grateful to its many good friends, among whom should be mentioned the Women's Committee, the Alumnae Association of the School of Nursing,

the members of the School of Nursing Committee and the many doctors and staff members who contribute to instruction of students.

Murial B. Vesey, R.N.
*Director of Nursing Service
and School of Nursing*

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SOCIAL SERVICE

Introduction

When a report is written yearly, the fear of repetition and staleness arises. This fear has been unfounded during the last decade or more of the transitional years when the hospital has been growing and becoming unified into a Medical Center. There are always new developments to present. Mention should be made this year of two in particular.

First, this Social Service Department and the Children's Mission have become closer in their staff relationships and in unifying services to patients. This has been the result of a joint effort on the part of both groups. Case conferences and mutual exploration of appropriate referrals were two means which contributed to this end.

Secondly, the Social Service Department has been assigned the administration of several generous funds which had been contributed for special needs of individual patients. It has, therefore, been possible to help with such things as board and room for desperate out-of-town families, chair lifts for polio patients, and special schooling.

Staff changes

The usual "hail and farewell's" have been in evidence. In November, the long-vacant position in Neurology was filled by Miss Diane Livingston, who had graduated the previous year from Simmons College School of Social Work and who had spent a year in a Psychiatric Clinic in England. In January, Mrs. Ann Sheingold resigned from the Psychiatry Department to return to private life. She was replaced by two half-time workers, Mrs. Frances Lewis and Mrs. Louise Lown, both with previous experience. In June, Mr. Andrew Johnston resigned from the Respirator Unit to take a position in a Rehabilitation Unit in Water-

ville, Maine. Also, Mrs. Nancy Norton in Psychiatry resigned to accompany her husband to the West Coast. At the end of July, Mrs. Evelyn Silverman, who had been working a day and a half in Psychiatry, retired to private life. In August, Miss Suzanne Fleischer resigned from the Orthopedic Service for advanced education in Public Health. Miss Anne Turner from the Simmons College School of Social Work replaced her. Also, in August, Mrs. Janet Mayer resigned from the Medical In-Patient Service to enter private life. She was replaced by Mrs. Jane Scease who had just graduated from the Simmons College of Social Work. In September, Mrs. Virginia (Rugh) Wade resigned from the Polio Service to accompany her husband to Cleveland. She was replaced by Miss Mary Lou Weaver who had just received her Master's Degree from the University of Pittsburgh School of Social Work. In September, Mrs. Phyllis Haberstroh, a recent graduate of Simmons College School of Social Work with some previous experience in Canada, came to the Psychiatric Clinic to replace Mrs. Norton.

Teaching

The course to student nurses was again given in June by Mrs. Ruth Cowin and the Director. Two students were placed in Psychiatry, one from Boston University School of Social Work and one from Simmons College School of Social Work, under the supervision of Miss Walsh and Miss Anderson. A third student was placed in the Medical Division under the supervision of Mrs. Ruth Cowin.

The Social Work Careers Program again sent us a college student for eight weeks during the summer, supervised by Mrs. Evelyn Roll and working primarily on the Orthopedic Service. The Social Service Depart-

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ment contributes its share of time to giving lectures, being on panels, and other community teaching.

Staff Education and Opportunities

Dr. Benaron continued his psychiatric group consultation every other week for the medical workers. A staff committee has been considering ways of furthering staff education and stimulation within the group. Attendance at out-of-town conferences and further formal education has been curtailed by lack of funds, although the hospital has been generous in allowing time.

Direct Service to Patients

The Social Service Department has had major or minor interest in 4,606 patients during the year. Through our camp program we sent 105 children for 459½ weeks, carefully selected because their physical or emotional needs seemed to warrant such an experience.

We have been increasingly concerned with the number of children coming to our attention either because of demonstrated neglect or abuse, or where such is suspected but difficult to prove. We have worked closely with the doctors and the Society for the Prevention of Cruelty to Children on these cases and are now collecting them for study, to see if future handling can be improved.

Of course, the Social Service Department deals with many patients and families and distances, including a variety of foreign countries. Knowledge of foreign languages, ways of communicating with distant communities, and arrangements for appropriate temporary living in Boston have been additional facets to the ordinary social problems. Facilities near the hospital which will accommodate children and allow cooking have become increasingly more difficult to find.

Staff Needs

Request for additional members of the Social Service staff assigned to the Adolescent and Metabolic Units was made by Dr. Gallagher and Dr. Crigler. Lack of funds has prevented these additions. Another psychiatric worker has been requested this fall because of the increased psychological and psychiatric staff. A worker for the Surgical Service has been authorized, but not yet found.

Adjustments and Hopes

With the relatively large staff of twenty-eight members, widely distributed physically, working in somewhat self-contained units and in some instances paid through special funds, it is difficult to maintain integration, cohesiveness and solidarity for the whole department. Adjustment to the continuous growth of the Social Service Department has been a yearly necessity since 1947 when the first new social worker was added to the Seizure Unit. This growth from seven to the current number has made us one of the largest departments in the Boston hospital community. We are now big and we feel it. Nevertheless, the unity of the Social Service Department has been maintained. The desire and effort of each individual member to be a part of the whole has been the greatest welder, and has been the basis of its esprit de corps during the last year.

It is a pleasant custom at the end of a report such as this to thank those with whom we have been associated in the year's work. At this time, I should like to concentrate on expressing our appreciation to Mr. Greer for his interest in the department since his arrival,

and to Dr. Snedeker for the continued interest and help he has given over these many years.

Marion W. Hall*
Director of Social Service

*Miss Hall died on March 24, 1961.

REPORTS OF ADMINISTRATIVE DEPARTMENTS

OUT-PATIENT

The Out-Patient Department as a whole has shown an increase within the last five years in the number of visits to the forty-one clinics that comprise this department. Attendance in the three major clinics, however, has remained the same and in some instances a slight drop has been noted. This drop is offset in the overall figure by the increase in the Special Clinics including the Medical Emergency. Most of these clinics have reached their optimum capacity and in some instances have far exceeded their physical facility.

In 1952 patients made 53,946 visits to the Out-Patient Department. The following year the number jumped to 70,802. The average number of visits in the Out-Patient Department for the last five years is between 85,000 and 87,000 per year. There have been two exceptional years. The highest figure recorded was in 1959: 97,667 visits were made to the Out-Patient Department. The next greatest number was 91,478 visits in 1956.

In analyzing these figures, we find, the Psychiatry Department showed an increase in 1959 of about 5,000 visits over the previous year. In 1957 they moved to the east wing of "A" Building and in this area were able to meet the need for a while. Presently the need has again outgrown this facility. The waiting list for appointment for treatment is now from four to six months.

The Medical Emergency Clinic has increased at a startling rate. It is difficult to appreciate the "real" increase here because in September, 1958, it was necessary to keep the clinic opened until 11 P.M., seven days a week, to accommodate the increase. The statistics were thrown off balance that year because the number seen after 4:30 P.M. formerly had been included in the Surgical Out-Patient statistics.

The "real" increase may be realized in the last two years, with the hours and recording of statistics being the same. In 1959, 12,234 patients were treated. In 1960, 14,216 patients were treated. This increase has been consistent for the last five years. Although improvements have been made such as supply cabinets and counters, the problem of sufficient space has not been solved. The space to maintain adequate emergency and isolation rooms as well as space for medical students and clinical fellows is urgently needed. Also provision for comfortable waiting space for parents is lacking.

While the Medical Emergency Clinic is showing a steady increase, there appears to be a tendency for lower clinic attendance in the General Medical Clinic. The number of patients seen in 1958 was 6,595; in 1959, 6,694; in 1960, 6,242. The number of "new" patients has shown a decrease also. In 1958 there were 2,761; in 1959, 2,755 and in 1960, 2,405. The waiting list for new appointments at present is one week.

The following clinics have shown an increase in patients treated:

| | 1954 | 1960 |
|--------------|-------|-------|
| Psychiatry | 2,204 | 9,422 |
| Division of | | |
| Child Health | 1,751 | 3,089 |
| Adolescent | 4,393 | 5,766 |
| Allergy | 3,216 | 4,432 |
| Cardiac | 1,568 | 2,066 |

A number of alterations in administrative procedure have been made, aimed at increased efficiency, reducing patient waiting, and increasing the number of patients who can be seen in the same time. These include the introduction of an advance registration form to enable records to be made out in advance for new patients so that they may be seen more promptly in the morning and the use of a preliminary history form which

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parents may fill out while waiting. This does not replace regular history taking by the physician but provides him with quicker answers to routine questions such as those concerning birth weight, siblings, immunizations, etc. Efforts have been made to streamline the return of laboratory reports and to have the reports obtained by the clerks at the end of each afternoon and put with the records of those patients scheduled to return the following morning. This has been difficult to do because of the difference in timing between the return visit and return of laboratory reports.

To facilitate the identification of out-patients for charges an addressograph identification plate system was introduced in June, 1959. The plastic plate when used properly identifies the patients for billing primarily, but may also be used in the internal operation of the clinics. To date over 23,000 plates have been issued. The great mobility of our patients makes it necessary to re-issue plates not infrequently; this, combined with the lag in establishing the plate system throughout the entire out-patient department, leaves much to be desired by the accounting department. In the major clinics where the plate system is well established there is evidence of improvement in patient identification and acceptance of the professional staff of the plate as a time-saver in making out requisitions and forms.

The Out-Patient Admitting Department has been able to handle the many details of admissions efficiently and with consideration. The introduction of the addressograph plate system and the "Rating" of parents according to their ability to pay has of necessity increased the number of personnel needed in this department. The department is much too small both from the standpoint of patient comfort and

personnel efficiency. Interviewing should be conducted with some degree of privacy. Remodeling with partitions is unthinkable unless the area can be air-conditioned. The need for more room will not be solved until this department can be relocated.

The increase in the clerical and secretarial details of the clinics throughout the Out-Patient Department is noticeable. This has produced in some instances better controls of records, charges, appointments and has improved patient satisfaction. Except for the General Medical Clinic, an effort is made to type into the patient's records the dictated clinic visit. This is being done in many of the clinics and allows the doctor more time to see patients, thus cutting the waiting of the patient to some extent.

The reading of former clinic notes is no longer a problem and the appearance of the record has improved. In the Surgical Clinic over 135 clinic notes are typed each week. The average in the Orthopedic Clinic is 175 each week. In the General Medical Clinic a letter is dictated and sent to the referring doctor on each new patient. An average of 250 letters a month are mailed. The doctor receives a letter explaining treatment, diagnosis and disposition of his patient.

An interdepartmental public address system was established five years ago in the Medical Out-Patient Department between the nurses' station and the clinic examining areas. This has proved a great time-saver in summoning the various doctors to the telephone when they have calls.

Each clinic worked out a system of "Processing Cards" which enables them to have a record of the patient's visit, his return appointment, and the disposition of his medical record.

The Admitting Office felt the

need for revision of the addressograph plate system which had not been entirely satisfactory since its establishment. In 1955 this was accomplished. A two plate system was introduced. It is now possible to send more detailed information to areas that need it, such as the Accounting Department, by imprinting a three-by-five-inch card with the nine-line plate, and limited information to other areas by the use of the four-line plate. This plate is sent to the divisions with the patient on admission.

In an effort to improve the admitting procedure and reduce the waiting time for parents the admission forms were studied. A multi-interleafed form was finally accepted. This eliminates the repetitive typing of numerous sheets that make up the admission record. The Out-Patient admitting form was revised at this time, thus making both house and out-patient forms identical.

Conclusion. Although much has been accomplished within the last five years there is still a great deal more to do. The entire Out-Patient Department needs to be coordinated with more centralized control which would tend to eliminate the waste of time and effort expended caused by the lack of knowledge or understanding of administrative policies.

To improve medical care of the ambulatory patient, I recommend more regular Staff doctors be assigned to the clinics responsible for the follow-up of the patient. Follow-up by the same doctor is not always possible when the house staff doctor, because of other commitments, is not in the clinic when the patient returns.

I recommend one emergency clinic with space adequate for this purpose and all emergencies treated there day and night. The Surgical Clinic

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should be reserved for return visits of these Surgical patients and all others referred to it.

I recommend improvement in methods of rating, coding, budget interviewing, and charges.

The above summary has indeed tended to emphasize the managerial aspects of the department, with little mention of the medical aspects. This has been intentional, it being realized that medical care, teaching, research and staffing have been covered in reports from the medical staff.

The accompanying list shows innovations, revisions and improvements introduced into the major clinics and Admitting Office within the last five years.

Dorothy Pratt, R. N.
*Supervisor,
Out-Patient Department*

O.P.D. Admitting

Revision of the Multiple Admission Forms, with reduction in cost of form.

Both House and O.P.D. admission sheets now are identical.

Introduction of the Addressograph System of plastic plates for patient identification.

Revision and improvement of the method for handling the following:

Correspondence

Appointments

Follow-up on new patients who fail to keep appointments

Follow-up on B.L.I. referrals.

Monthly review of M.O.P.D. schedule with the Resident to coordinate the patient load to the number of doctors in the clinic.

Improvement of equipment and physical set-up:

Electric typewriters replacing manual typewriters

New desks and chairs

Ventilator fan

Improvement of traffic flow

Pre-Registration Forms.

Revision of "Parent's Handbook."

S.O.P.D.

Addition of full-time secretary.

Extension of clerical coverage to 11 P.M. daily plus Sunday and holiday coverage.

Dictation of clinic notes.

Improvement in correspondence control.

Renovation of the three Operating Room tables.

New chairs and tables for the Examining Rooms.

Installation of air conditioning in Operating Rooms No. 2 and No. 3, and vent fan in Operating Room No. 1.

Remodeling of Utility Room.

Improvement in details of clerical job.

Establishment of a Day Sheet.

Improvement in method of compiling accident statistics.

Individual Dressing Kits.

Purchase of additional instruments to allow for the preparation of emergency dressing trays and minor surgical kits by Central Supply Room.

Blueprints for further remodeling of the department.

Admitting Office

Extension of hours to 11:00 P.M. daily, Sundays and holidays.

Introduction of a two-plate system of addressographing, with marked improvement in the imprint.

Introduction of a Multiple Copy Admitting Form, and a Day Sheet with a single appointment sheet to replace four books.

A survey of telephone calls. (Reduction of calls through wider distribution of information on admissions: three-by-five-inch imprinted card sent to all residents and physicians in C.H.M.C.)

A twenty-four-hour advance notice of discharge.

Revision of "Notice of Discharge."

Revision of method and format of daily Admission and Discharge List.

Typing and processing of Daily Census Summary (formerly done by the Nursing Office).

Electric typewriters to replace manual typewriters.

Purchase of an electric Addressograph Machine to replace the manual imprinter and relocation of equipment.

Removal of the Telefax Machine to the Information Desk; removal of Graphotype Machine.

Revision of "Parent's Handbook."

Updating of "List of Hotel Accommodations for Parents."

Free distribution of "Johnny Goes to the Hospital." (Continued)

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Medical

Control center remodeled. Laboratory moved and remodeled. Secretary's office established adjacent to Control Center. New floor covering throughout.

Improved method of records control.

Creation of a dictating station, with two dictating machines.

Introduction of a monthly report of letters not dictated.

Inter-Department P.A. System.

Orthopedic

Revision of appointment book.

Improved method of filing Brace and Processing cards and billing.

Addition of a secretary to the staff.

Dictation of all clinic visit notes.

Plaster Room painted and re-arranged.

Medical Emergency Clinic

Extension of clinic hours to 11 P.M. daily, Sundays and holidays.

Addition of one staff nurse and one nurse's aide.

Relocation of evening admitting clerk in relation to the clinic.

Remodeling of department with improvement of facilities. Location of Poison Information Office in this department to allow proximity to the medical doctor who covers this service.

Addition of two telephones with the P.U. and H. System.

Air conditioning of the Isolation Room. Vent fan on ventilation system installed.

MEDICAL RECORDS

The attached statistical report clearly indicates the trend of activity in the Medical Records Department. It is one of continuous increase in the volume of records furnished for all uses. This increase has added to the recognized problem of operating in inadequate space.

The completion of the first step of microfilming, with a total of 171,500 records filmed and filed, alleviated a portion of the storage problem. The microtape system was placed in use in January. It was interesting to note that, after completion, the entire cost of the system projected to the total number of records resulted in the surprisingly low figure of approximately 23 cents per record. This included preparation of records, filming and microtape reproduction set-up, cards, indexing, folders, card cabinets, reading equipment and storage of negative film. There was a ratio of better than 8 to 1 of cubic feet saved between the space utilized by the cabinets storing the records and those now storing the microtaped cards with room for expansion. This alone represents a saving in actual cash in operating cost, based on the hospital's own evaluation of \$10,343.00 per year. The elimination of replacement of cabinets, labor and moving, transportation, and time saved, results in an additional saving of approximately \$3,500.00 to \$5,000.00 per year.

The filming of the first group of records provided for retention of twenty years of active records in their original form. A planned program provided for retirement of one year of records every year. Subsequently, the 1939 records were filmed and are now in file ready for use.

There is a difference of approximately 6,000 records per year between the rate of the early years and the present rate of new records issued. There-

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fore, even though one year of records is retired each year, a balance remains between those filmed and new records issued, so that the filming program at present does not solve the storage problem.

In an effort to help with this problem, additional space was provided in the basement of the Nurses Home of the Good Samaritan. Open shelves were installed, and records already stored there and those from the basement of the Main Department were moved to the shelves. A total of 131,900 records were involved in this change-over, which was completed September 30. An additional 13,025 records were shifted to the Annex of the Main Department. In these moves all records were checked and expansion provided. A total of 244 misfiles were found.

The basement of the Main Department is in the process of renovation, and upon its completion a total of 126,375 records in the upstairs area will be re-allocated, so that new shelf space will be available for expansion. This move will provide a maximum of three to four years' space at the present rate of new records issued.

During the renovation, the old patient's index and diagnostic cards were filmed. A total of 273,000 cards are now in file on reel film. This program provided for preservation of data and release of space.

With new personnel in all sections, progress has been retarded because of necessary training. However, the Correspondence Section is working on a current basis; the Secretarial Section is holding the line on transcription; and the Coding Section is slowly making a gain in the backlog. In spite of many handicaps, the Filing Section has provided continuous good service in an ever-increasing volume.

In August The Children's Hospi-

tal was approved by The Education Committee of The American Association of Medical Record Librarians as an affiliated hospital for The Medical Librarian School at Massachusetts General Hospital. A student will be assigned here to spend the month of April on an internship basis.

Plans are in process to start a training program for medical secretaries and coding clerks.

A paper entitled "Microfilm Helps a Medical Record Department

Dig Out From Under," written by the Director, was published in the October 1960 issue of the magazine *Microfilming and Data Processing*.

The Medical Records Department is appreciative of the cooperation, encouragement, confidence and assistance of the Administration and of all the Departments of the hospital during the past year.

Marie Smith, R.R.L.,
Director,

Medical Records Department

STATISTICAL REPORT OF MEDICAL RECORDS DEPARTMENT
Comparative Totals 1960 and 1959

| | 1960 | 1959 |
|--|-------------|-------------|
| Tabulated Requisitions—Records Pulled (Excluding Department use and Research) | 117,097 | 109,081 |
| | <u>1960</u> | <u>1959</u> |
| Telephone Calls | 41,862 | 39,821 |
| Records Pulled for Research | 10,322 | 8,874 |
| Patients Index—tabulated calls | 79,926 | 53,045 |
| New Records Issued | 15,424 | 16,410 |
| Discharges* | 9,959 | 9,906 |
| Total Operations (including Throat) | 5,590 | 5,492 |
| Correspondence (Requests handled) | 5,477 | 5,409 |
| Income | | |
| | <u>1960</u> | <u>1959</u> |
| | 3,581.25 | 2,905.65 |
| Photostating (pieces) | 6,548 | 9,512 |
| Inter-Departmental Transfers | | |
| | 401.75 | 557.10 |
| Crippled Children—authorizations | 668 | 664 |
| Records Taken to Court | 48 | 27 |

Explanatory Remarks: The items Discharges and Total Operations represent the work of the collating clerk in preparing the records plus the work of the entire secretarial section involving transcription and transmittal for signature. The total number of records pulled and calls to the Patients Index, as shown, do not represent the total amount of work actually performed, since it is impossible to tabulate all requests actually completed.

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PATIENT EDUCATION AND
RECREATION

The Department of Patient Education and Recreation during 1960 carried out the objectives and activities set forth by Mrs. Joyce Meyer, the coordinator, who left the hospital in September of 1959. Miss Marcelle Hocquet, as senior, in 1960 supervised the activities of the nursery school teachers in the three hospital playrooms in Building B. In the fall of 1960 Mrs. Nancy Cronic became the play teacher in the House of the Good Samaritan. The nursery school teacher on Division 25 is subsidized by a grant from the Daffodil Club. Mrs. Eva Pahnke, at the same time, became a part-time teacher in a classroom program for children at the House of the Good Samaritan. She is subsidized by a grant from the Women's Committee. Her principal duty is to develop a program supplementing the bedside instruction provided by the four teachers from the Boston School Department.

Mrs. Avis Bray has continued in the office of the Department three mornings a week and, in addition, has continued to assume sole responsibility for the evening program for older children both in The Children's Hospital area and at the Good Samaritan. The staff has continued its educational activities in the playrooms in Building B. There have been twenty-two student teachers from Wheelock College, eleven each semester, for one morning a week. In addition, there has been one student from Garland School four mornings a week for three months and all day for three weeks. Two student nurses have been assigned every two weeks for work on a full day basis; a total of fifty-two nurses have helped with the program.

Among the volunteers there have been three Red Cross workers one afternoon each week and others on the average of five for one afternoon

a week. The evening program has been somewhat more intensive; a total of thirty volunteers have worked evenings during the year at Children's Hospital as well as twenty at the House of the Good Samaritan.

Some of the playrooms were closed during the summer months but a survey of attendance for the six months January to June, 1960, shows that the total average daily attendance in all playrooms was thirty-three children a day for five mornings a week.

The Committee on Patient Edu-

cation and Recreation continues its search for a coordinator. There is some difference of opinion as to whether leadership should be selected from people with an educational background or from those oriented in social work.

The Committee hopes that a fuller degree of cooperation may be achieved in the future with the Boston School Department. The potentialities of our Medical Center with respect to the training of teachers of the handicapped are not being realized.

DAILY AVERAGE ATTENDANCE IN PLAYROOMS
FOR FIVE MORNINGS A WEEK — 1960

| | Playroom 25 | Playroom 26 | Playroom 27 |
|----------------|-------------|-------------|-------------|
| January | 6 | 13 | 10 |
| February | 6 | 12 | 10 |
| March | 9 | 14 | 11 |
| April | 7 | 14 | 14 |
| May | 7 | 15 | 12 |
| June | 9 | 18 | 12 |
| 6 mos. average | 7.3 | 14.3 | 11.5 |
| July | 6 | 11 | — |
| August | — | 19 | — |

Total Average Daily Attendance — All Playrooms 33.1

PARTICIPATION IN PROGRAM BY
VARIOUS CATEGORIES OF WORKERS — 1960

PLAY TEACHERS

| | |
|---|---|
| Children's Hospital (daytime) | 3 |
| House of Good Samaritan (Miss Shirley Hicks) | 1 |
| Mrs. Avis Bray (evening program plus 3 mornings a week) | 1 |

STUDENTS

| | |
|---|----|
| Student Teachers—Wheelock College, 11 each semester one morning a week | 22 |
| Garland School, 1 student for three months, four mornings a week plus three weeks all day | 1 |
| Student Nurses—2 every two weeks for eight hours a day with time out taken for classes | 52 |

VOLUNTEERS

| | |
|---|----|
| Red Cross Volunteers—3 one afternoon each week for textile or clay work | 3 |
| Hospital Volunteers—5 average one afternoon a week, evenings—30 at Children's Hospital, 20 at House of the Good Samaritan | 20 |

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PHYSICAL THERAPY

In reviewing the report of the Physical Therapy Department, it should be remembered that it is more accurately the report of the activities of all physical therapists in The Children's Hospital Medical Center who may be assigned to any one of several work areas or departments. These include the Cerebral Palsy Nursery School and Clinics, the Massachusetts Infantile Paralysis Clinics, the Mary MacArthur Respiratory Unit and the House of the Good Samaritan, as well as the out-patient clinics and divisions of Children's Hospital proper. Our responsibilities also extend to the private patients of any staff doctor.

Patient Care

Comparison of the statistical report for the year ending September 30, 1960, with that of fiscal 1959, shows a decrease of 8 per cent in the total number of treatments given (31,158 vs. 28,902). This is most noticeable in the polio out-patient clinics, where a decrease of 25 per cent represents a fairly large number of patients. Other areas showing a marked decrease in referral of patients are neurological, 75 per cent, neurosurgical, 50 per cent, and Infants' Hospital, 50 per cent.

Offsetting this was a 25 per cent increase in treatments of polio in-patients (9,600 vs. 7,000), mostly in the first two months of the fiscal year. Except for a slight increase in the number of private out-patients, other figures remained fairly constant.

Personnel

Corresponding to this drop in patient load, we have decreased our staff by one person. Our present number of physical therapists is nineteen, one of whom is part-time. The problem of obtaining replacements continues to be acute and at times necessitates cur-

tailment of patient load. There were five resignations during the year, four of them replaced. Three of the four occurred in June, but replacements were not available until September. With a stable supervisory group we can adjust to an annual turnover of this number in the more junior categories. It is interesting to note that the five senior (in tenure) members of this department represent a total of eighty-five years of service to The Children's Hospital.

We have a secretary, clerk, and attendant who are responsible for the efficient management of the department in the handling of appointments, records, correspondence, accounting and equipment. Since they also staff a reception and information desk at a very busy entrance, they are to be commended for an excellent job of public relations.

Education

The hospital continues its affiliation with Simmons College in the formal teaching and clinical supervision of physical therapy students. Five members of our staff hold faculty appointments at Simmons, including the Director, who also serves as technical director of the program within the School of Science. During the year nine students who received the major portion of their teaching here were graduated with a B.S. degree and a Diploma in Physical Therapy. There are two classes of ten and seven each currently under instruction.

Four students from Boston University's Sargent College and four from the Bouve-Boston School of Tufts University were accepted for supervised clinical practice. One member of the department also serves as a member of the Corporation and of the Executive Committee of the Bouve-Boston School.

REPORTS OF ADMINISTRATIVE DEPARTMENTS

We have provided roughly 150 hours of teaching for the Nursing School, nursing affiliates and medical students. This is an average annual amount and does not include many hours of informal teaching with the resident staff.

Two post-graduate courses on physical therapy in the treatment of cystic fibrosis were offered, in November of 1959 and June of 1960. There were ten (maximum enrollment) in each group, representing nineteen different hospitals or clinics in twelve states. This method of treatment was developed in this hospital and has received rather widespread attention. Demand for additional courses continues.

Miscellaneous

Representatives from the department have attended five conferences or educational institutes of short duration.

We have had many applications from foreign physical therapists who wish six to twelve months of affiliation here as trainees under the Exchange Visitor Program. Unfortunately, our budget has not permitted consideration of these applications, with the exception of one from Trinidad who was sponsored and financed by the International Cooperation Administration for a six-week period.

We have had many visitors from other countries as well as from different states in this country.

We have been pleased to participate in various public relations activities, particularly in reference to outside agencies such as the National Foundation and United Cerebral Palsy. This has involved arranging for photographs, demonstrations, tours and informal talks to interested groups.

Shirley Cogland
Director,

Physical Therapy Department

ANNUAL REPORT OF THE PHYSICAL THERAPY DEPARTMENT
October 1959 to September 1960

| | Individuals | Treatments |
|---|-------------|------------|
| Polio Cases in the Hospital | 234 | 9,602 |
| SERVICES (excluding polio) | | |
| Division 37 — Medical | 73 | 545 |
| Division 26 — Orthopedic | 276 | 2,964 |
| Division 36 — Orthopedic | 149 | 1,773 |
| Division 71 — Respiratory Unit | 10 | 396 |
| Division 72 — House of the Good Samaritan | 10 | 698 |
| Division 73 — House of the Good Samaritan | 11 | 550 |
| Division 25 — Private | 24 | 394 |
| Division 24 — Surgical | 13 | 203 |
| Division 34 — Surgical | 16 | 240 |
| Division 39 — Neurological | 21 | 36 |
| Division 35 — Cardiac | 9 | 157 |
| Division 28 — Tumor Therapy | 10 | 127 |
| Division 27 — Infants' | 19 | 259 |
| Division 33 — Neurosurgical | 33 | 255 |
| Division 14 — Throat | 3 | 4 |
| | 911 | 18,203 |
| HOSPITAL PERSONNEL | 30 | 149 |
| | 941 | 18,352 |
| BADER BUILDING OUT-PATIENT | | |
| General Clinic | 675 | 2,134 |
| Privates | 499 | 1,735 |
| Cerebral Palsy Clinic | — | 919 |
| Cerebral Palsy Nursery School | — | 675 |
| MIPC Outside Clinics | — | 1,668 |
| | | 29,004 |

REPORTS OF ADMINISTRATIVE DEPARTMENTS

PERSONNEL

In the past fiscal year nearly 1700 people have been interviewed by members of the Personnel Department. The majority of these applicants came to us independently, with approximately twenty per cent responding to advertisements in local papers, and about thirty per cent being referred either by an agency or a friend. Not included in any of these figures are potential members of the nursing staff, who are seen only in the Nursing Office.

About 600 employees left in the past year, with the highest percentage of turnover in Nursing Service and those departments in the service areas. In reviewing the reasons for termination, we have only the information which the department head or supervisor has supplied on the termination report, as the Personnel Office does not at this time conduct terminal interviews.

One of the most important projects of this department was the much-needed employee handbook, although the actual publication and distribution will not take place until the beginning of the next fiscal year. This booklet will be given to all current employees and to each new employee when he comes on payroll.

On October 1, 1959, a new budget system was established by Administration which brought new responsibilities to this department. Procedures and forms were adapted to insure that all salary rates and number of employees are kept within budgetary limits.

Throughout the year we have conducted several surveys both here and in other hospitals in the Boston area to keep our policies and salary scales consistent with these neighboring hospitals.

In May of this year, we had the first Annual Service Pin Award cere-

mony. Before then, each department head had presented the service pin to an employee on the anniversary of his tenth year of employment. All employees who have had five or more years' service are now invited to this annual event.

In fiscal 1961 there are many programs to be developed by the Personnel Department to improve its services to the Hospital and its patients. The programs must focus on improved human relations and better working conditions for all employees.

Specifically, the following plans should be inaugurated to attain these objectives:

1. Develop and publish personnel policies and procedures which will be equitable for all employees.
2. Establish an adequate wage and salary system based on recognized job evaluation techniques, so that employees are paid in relation to work performed.
3. Intensify recruitment efforts to provide sufficient and proper personnel.
4. Formalize personnel records to provide adequate service to supervisors and employees.
5. Establish an improved budget control system.

There are many other programs that must be established in the future to provide improved service to our patients, such as training courses, orientation courses, improved records and statistics, but if the above can be accomplished this year, I feel that a good start will have been made.

Alexander T. Brown
Personnel Director

REPORTS OF ADMINISTRATIVE DEPARTMENTS

VOLUNTEER SERVICE

Volunteers donated 41,282¼ hours of their time in the past year in Volunteer Service work to assist the professional staff in making our patients and their parents feel "comfortable and safe." While the burgeoning growth of the past five years, during which the hours of service increased from 25,800 to the present total, seems to have leveled off, we have experienced no sense of being less busy nor have any requests for assistance been long unfilled.

The Library volunteers have continued to supply an outstanding service while handicapped by their new and meager quarters. It has not been possible for the same number of women to work in such a tiny space but they have more than compensated by the quality of service they have continued to give the patients.

The branch library, at The House of the Good Samaritan, has grown to be an important factor in the convalescent patient's day.

We were fortunate in obtaining pupils from the Boys' Latin School Key Club to help prepare the plaster casts, a dusty job that held no appeal for female volunteers.

The Gift Shop, under Mrs. H. Raymond Wilkinson's guidance, and the Coffee Shop, under Mrs. Samuel S. Stevens' chairmanship, continue to give the same high quality of service as in the past and to show a respectable profit.

During the summer months when, because of family responsibilities, the older women are unable to fulfill their volunteer commitments, seventy-eight teen-agers served more than 8,000 hours. They were students at thirty-eight high schools and colleges. The volunteer department sent a letter to each school, informing them of the students' summer activities.

A group of Harvard Medical School wives met twice a month to make surgical dressings.

A Volunteer Service Committee was formed in April to assist and advise the Director of Volunteers. It includes two members of the Women's Committee, chairman of Staff Wives, president of House Staff Wives Committee, Director of Nursing Service, a representative from the Medical Staff, the executive secretary of the Women's Committee and, ex-officio, the Director of The Children's Hospi-

tal Medical Center and the Chairman of the Women's Committee. The committee assisted with the Evening Party for volunteers. I look forward to continued guidance from the committee.

I was privileged to attend the initial Workshop for Directors of Hospital Volunteers at Boston University. The Workshop was instituted at the urging of the Greater Boston Council of Directors of Hospital Volunteers, and proved to be so successful it is this year being sponsored by the Massachusetts Hospital Association.

HOURS OF VOLUNTEER SERVICE

| SERVICES | Oct. 1959 Sept. 1960 | Oct. 1958 Sept. 1959 |
|-----------------------|-------------------------|-------------------------|
| Administrative Aides | 1,346 | 2,047½ |
| Admitting Hostesses | 1,421¾ | 1,457¼ |
| Blood Bank | 348¾ | 341¾ |
| Central Supply | — | 62 |
| Christmas Decorations | 75½ | — |
| Feeding | 1,044¼ | 1,021½ |
| Gift Shop | 6,894½ | 9,267¾ |
| Good Samaritan | 3,317¼ | — |
| Information Desk | 420½ | 481½ |
| Laboratory | 1,329¼ | 30 |
| Library, Patient | 1,031 | 2,197¾ |
| Lunch Shop | 7,447 | 8,195 |
| Medical Records | 143½ | — |
| Mended Hearts | 1½ | 3 |
| Parents Teas | 216½ | 208 |
| Pharmacy | 13 | — |
| Photography | 162 | 113½ |
| Plaster Room | 575¼ | — |
| Post Office | 183½ | 274¾ |
| Recreation | 3,030½ | 5,980½ |
| Red Cross Aides | 799 | 941½ |
| Social Service | 68½ | 67½ |
| Surgical Dressings | 953½ | 679¼ |
| Transportation | 4,993¼ | 3,994¼ |
| Volunteer Aides | 1,964¼ | 3,295½ |
| X-Ray | 329¾ | 42 |
| Totals | 41,282¼ | 44,180½ |

REPORTS OF ADMINISTRATIVE DEPARTMENTS

DIETARY

As a member of The Children's Hospital Speakers Bureau, I gave talks before several fraternal organizations, church groups and to The Jordan Hospital Auxiliary. I served as chairman of the committee to re-vamp the by-laws of the Greater Boston Council of Directors of Hospital Volunteers and for a two-year period will be the recording secretary of the council.

A salaried secretary has fulfilled a long-standing need in the volunteer department.

The attached statistical report indicates the various types of work our volunteers are performing for the hospital, but does not relate even a part of the devotion given to this institution by the volunteers.

I would like to express my deep appreciation to Administration, Staff and the Women's Committee for their continued support and assistance, and to the Volunteers who make the report necessary and possible.

Kathleen Higgins
Director, Volunteer Service

The dietary department of The Children's Hospital Medical Center has as its primary responsibility the preparation of all meals for its patients, including those of the Judge Baker Guidance Center School. In addition to this and far more time-consuming is the operation of the staff and employee cafeteria which often provides more than 2,000 meals per day.

During the past year our department served 240,030 regular meals and 29,565 special diet meals to patients. In the staff and employee cafeteria, 491,558 meals were served. In addition to providing these meals, the department is called upon to supply refreshments to such areas as the blood bank, the surgeons' and scrub nurses' lounges and to many of the meetings and conferences held at the Medical Center.

The dietary department has a staff of 65 (41 full-time, 24 part-time) persons who plan all meals, purchase and prepare all the food, and serve in the cafeteria.

Meals for the patients are provided in bulk in heated trucks to the floor or sub kitchens where they are put on trays and served by the nursing department. The management of the floor, or sub kitchens on the patient divisions by the nursing department is under study and it is possible that the dietary department will assume that responsibility during the coming year. This should relieve the nurses and their aides of the tasks of setting up patients' trays, give the dietitians better control over the management of these kitchens, and provide for more direct contact between patient and dietitian.

With the exception of the main kitchen, the activity of the dietary department has far outgrown its present quarters. The staff and employee dining room serving facilities and dish-

washing equipment are no longer adequate to handle the volume of feeding. Long lines waiting at the cafeteria at meal time give evidence to this problem. The immediate need here is to increase seating space in the dining room, enlarge and improve the dish-washing facilities, and add another serving line or increase our present serving facilities.

Martha Stuart
Head Dietitian

REPORTS OF ADMINISTRATIVE DEPARTMENTS

PURCHASING

In the past year the Purchasing Department has experienced the increased activity that naturally would be associated with the vast expansion in all Hospital departments. Changes in personnel and additions to existing staff are immediately reflected in this department in the requests for office furniture, typewriters, medical and surgical supplies, instruments—in fact, any or all the tools required to accomplish the projected assignment.

In the early part of the year Mr. Joseph P. Greer outlined and effected certain necessary changes in purchasing procedure by Hospital departments from General Funds. To take full advantage of centralized purchasing it has been necessary to insist that all requisitions be processed via Purchasing after receiving administrative approval. The routing of all orders through a single office has prevented duplication of shipments and allowed combination of identical orders resulting in competitive and quantity purchasing.

Some 15,000 purchase orders were sent to vendors, each resulting in a subsequent invoice which was checked as to receipt, verified for pricing, coded and forwarded to Accounting for payment. A perpetual inventory is kept on 1,500 items stocked for general use, including medical, surgical and laboratory supplies, blankets, sheets, pillow cases, printed forms, stationery and office supplies.

Our hospital is a charter member of the local Hospital Purchasing Corporation, founded in 1952, and the Purchasing Agent is a member of the Standardization Committee working with this organization. A recent article appearing in the *Journal of the American Hospital Association* records a most enlightening appraisal of seven successful years of group purchasing. Bi-weekly committee meet-

ings are held, and every possible means of effecting savings is explored and utilized. Pooling both the knowledge and supply requirements of many Hospitals in the Boston area into large volume purchases with definite specifications or standards is one proven way of obtaining substantial savings without sacrificing quality. An interesting and current topic is the trend toward the contemplated use of "disposables" as a change from the standard (reusable) product in many sections of the Hospital, Patient areas—Laboratories—Central Supply Service, etc. These disposables are designed for convenience, utility, and economy in saving valuable time by eliminating such tedious tasks as cleaning, washing, sterilizing, since the item is used once and discarded.

While labor-saving studies reveal that the time and wages of personnel involved in preparing reusable items are the compensating factor, the cost is an all-important consideration.

To point up the increase in cost on one item in general use between patient division and Laboratories, the following statistics are revealing. A glass specimen collector purchased in quantities of one gross per year at a total cost of \$130 for the year has been replaced by a one-time use article at a cost of \$3,000 per year. This increase in expense is offset, first, by the safety factor which had long been desired, second, by sterility, and, third, by probable savings in labor. None of these considerations can be evaluated on a dollar basis.

The staff presently consists of the Purchasing Agent, Assistant, two purchase order clerk-typists, an inventory clerk and an invoice clerk. In the Receiving Room we have the head Storeman, an Assistant and three helpers. With the exception of one helper added to the Receiving Room Staff last

summer, this is the same number of employees serving in the department ten years ago. This staff is not consistent with the expansion previously referred to, but anticipated changes in processing Special Fund activities is under consideration, and much clerical work not essentially purchasing may be channeled elsewhere.

Elizabeth Fitzgerald
Purchasing Agent

REPORTS OF ADMINISTRATIVE DEPARTMENTS

VISUAL EDUCATION

In reviewing the past year's work it is informative to list the many kinds of photography employed by the Department in its production of material for visual education in the medical field. We photograph patients for the medical record, which is a basis for teaching material and an invaluable pictorial record of the individual patient's progress to health. We make motion pictures of gait, growth and neurological problems. From time to time teaching motion pictures of surgical procedures are made. Magnetic sound is added if needed and is recorded here. We do a great deal of color photography for many purposes, but do not produce color prints. We make standard and 2x2 lantern slides in large quantities. We do both photomacrography and photomicrography. A lot of flat copy is made as the first step in making lantern slides and prints. We illustrate scientific papers and books. Several thousand X-rays are reproduced each year as prints and lantern slides. Exhibits for the many departments and services of the hospital are planned and made as needed. We are consultants on technical photographic problems related to the biophotographic field. We also do specialized photography by infra-red light and occasionally under ultra-violet light. Much laboratory equipment requiring highly specialized lighting conditions is also photographed. New applications of photography are constantly being found useful in the medical field.

Our patient load showed an increase of over five hundred photographs in the past year. An increase of 44 per cent was noted in the production of 2x2 (35mm) black and white lantern slides. Standard lantern slides increased 36 per cent. Motion pictures increased by 13 per cent. The trend is ever upward.

Thanks to the Women's Committee, whose grant of funds enabled us to purchase an electronic printer, we are now able to produce much better prints of X-rays than before. The machine is also very useful in difficult photographic printing problems involving patients. We are most appreciative.

It probably will be necessary to hire someone for vacation relief during the coming summer. This year the problems were most difficult with a vacation period spreading from late June to the end of September. We are operating the department with a total staff of four, while in other institutions doing an equal volume of work the staff is usually six persons. So far we get along very well when the whole staff is present.

In August I attended the annual meeting of the Biological Photographic Association at Salt Lake City, Utah. Several new techniques may have application here, after further study.

The one paper published this year is "Radiographic Reproduction," F. R. Harding, FBPA, Jour. Biol. Photo. Assn. Vol. 28 #2.

This has been a very busy year for the department. I wish to thank the staff for its cooperation. I should like to especially thank my own staff for their wholehearted cooperation.

F. R. Harding, *Director*
Visual Education Department

STATISTICAL REPORT OF DEPARTMENT OF VISUAL EDUCATION 1960

| <i>Service</i> | <i>Cases</i> | <i>Photos</i> |
|---------------------------------------|--------------|--------------------|
| Orthopedic | 559 | 2037 |
| Surgical | 262 | 705 |
| Neurosurgical | 112 | 270 |
| Medical | 605 | 1249 |
| Tumor Therapy | 472 | 1438 |
| Infants' Hospital | 55 | 115 |
| Pathology | 375 | 731 |
| Private Division | 384 | 1142 |
| Private Office Patients | 193 | 536 |
| M.I.P.C. | 35 | 114 |
| C. P. Clinic | 17 | 126 |
| Neuro-medical | 18 | 66 |
| Child Health | 7 | 12 |
| Adolescent Clinic | 13 | 31 |
| Dental Clinic | 9 | 33 |
| New Born Nursery | 2 | 7 |
| X-Ray Therapy | 6 | 14 |
| Seizure Unit | 2 | 3 |
| Respirator Unit | 1 | 2 |
| Total | 3152 | 8725 |
| Misc. Negatives | | 2594 |
| Misc. Prints | | 5632 |
| Black & White Lantern Slides 2x2 | | 1532 |
| Black & White Lantern Slides Standard | | 1624 |
| Color Slides 2x2 | | 446 |
| Color Slides Standard | | 220 |
| Motion Pictures | | 315 |
| Motion Picture Footage | | 14,310 ft. |
| Total Negatives | | 11,298 |
| Total Prints | | 14,357 |
| Total Charges | | \$16,222.20 |

REPORTS OF ADMINISTRATIVE DEPARTMENTS

PHARMACY

The fiscal year 1960 was eventful for the Pharmacy. In June, it moved into the area formerly used by the blood Donor Department, giving the Pharmacy 250 square feet of good working space and space for the efficient storage and dispensing of most pharmaceuticals used in the hospital.

The inner room of the old Pharmacy was retained and plans have been drawn to use it for manufacturing bulk pharmaceuticals, sterile injectable vials, washing bottles and the storage of some state-owned drugs. All volatile solvents, including alcohol and ether, must be stored in the cellar beneath the Admitting Office to conform to fire and safety regulations. These heavy materials are lowered from the street level by means of a hand-operated, antiquated elevator only to be carried to the street floor by means of a dangerous spiral stairway, when needed for use within the hospital.

The volume and value of the drugs dispensed by the Pharmacy was approximately \$250,000 in the past year. The advent of antibiotics, such as penicillin, chloramphenicol, erythromycin, has increased the cost of operation tremendously but has reduced the average patient stay in the hospital.

The Pharmacy of the Children's Hospital is confronted with different problems than other hospital pharmacies because it must dispense medicines in a suitable dosage range convenient for the nurse to administer and palatable to the child. Most pharmaceuticals are manufactured for adults with little or no attention directed to pediatrics. Examples:

Several strengths of sterile narcotics are prepared in the Pharmacy and are available in graduated vials for the convenience of the nurse in accounting for these drugs. The Pharmacy annually prepares approximately

1000 of these vials, which are not commercially available because of the small doses required for children.

Tablets and capsules of drugs containing adult doses, but used for children, are quickly diluted and made into capsules of convenient doses by means of a hand operated capsule machine capable of making 100 capsules at a time. This same machine is also used to make capsules of investigational drugs. A few of the important capsules made with this machine this year were potassium perchlorate 250 mg., penicillamine 250 mg., neomycin sulfate 100 mg. and 250 mg., and isoniazid 10 mg.

Approximately 5000 five Gram vials of penicillin were reconstituted, or dissolved, under aseptic conditions, properly labeled with strength and expiration date this past year. This penicillin, along with streptomycin was delivered to the divisions three days weekly, at which times the supplies were checked for expiration dates and supplies replenished, if needed. Considerable saving in nursing hours resulted.

It is the intention of the Pharmacy to supply chloramphenicol,

erythromycin in a ready to use, sterile vial in 1961 rather than to send it to the division in a dry form, requiring its reconstitution by a nurse. This can be accomplished by the addition of a freezer, which will allow the preparation of many vials at one time. Most of these drugs are quite stable in the frozen condition but quite unstable in liquid form.

Routine stock drugs for the divisions were delivered daily upon receipt of a requisition and all empty bottles and returns were picked up on this delivery. Many special medications for individual patients were delivered to the divisions at this time.

The Pharmacy is always glad to aid any laboratory or doctor to obtain any hard to get chemical and to prepare it in a convenient dosage form, if desired.

The most time-consuming job in the Pharmacy is the dispensing of prescriptions to out-patients; these number over 100 daily. Drug stores figure it takes six minutes to dispense a simple prescription, but much less time is required here.

The Pharmacy, in addition, dispenses, and accounts for all the vari-

RELATIVE CONSUMPTION OF DRUGS BY PROGRAM OR SERVICE

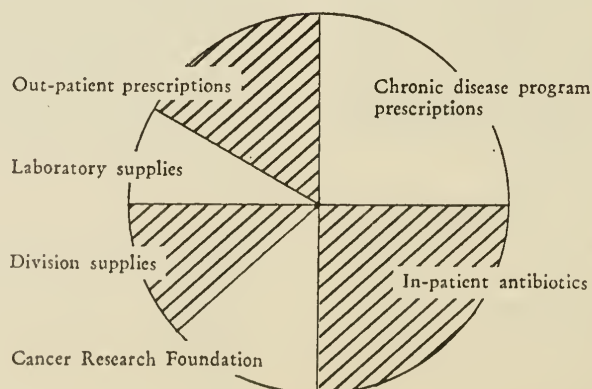


FIGURE I

REPORTS OF ADMINISTRATIVE DEPARTMENTS

SPECIAL SERVICES

ous drugs used under the Chronic Disease Program and purchased by the Commonwealth of Massachusetts. About 1200 patients with cystic fibrosis, requiring from one to 12 individual drugs, and about 1000 seizure patients, requiring one to five drugs each time, were served by the Pharmacy. The average state-owned inventory stored in the Pharmacy is about \$25,000.

A detailed monthly report is prepared for the Administration and Comptroller, with special sections for the Health Department of Massachusetts, Director of Nursing, and the Cancer Research Foundation. This report furnished the Administrator and Comptroller with the cost of drugs dispensed to patients, divisions, laboratories as well as the charges to the patients.

The Pharmacy is staffed by four pharmacists, including the chief pharmacist, and one helper. It is apparent from this report that the staff is hardly adequate to accomplish all that is necessary. It is hoped that an additional pharmacist, secretary, and office space for the Pharmacy may be obtained in the coming year.

Arthur M. Thompson
Chief Pharmacist

This new administrative department was established this year for more effective supervision of our parking lots, security program, elevator operators, apartment houses and grounds. It also will be responsible for many of the administrative arrangements of special functions held at the hospital.

1. Parking Lots.

The parking management program has been functioning effectively for two years. Basically it requires all parents, visitors and staff to pay 25 cents daily for parking and all regular employees and staff \$2.00 per month. Volunteers and unpaid house staff are issued free permits. The proceeds, approximately \$35,000 per year, are used to pay for professional parking attendants and for the physical maintenance of the lots.

The increased number of places resulting from more efficient use of our available space has brought a favorable reaction, particularly from our out-patient parents. Many comment that prior to the establishment of this system it was extremely difficult to get their children into our clinics because they were unable to park near the Hospital. The 25-cent fee is established only to cover the cost of operating the lots.

2. Security program.

The Hospital purchases the service from an established detective agency. It provides both a crew of uniformed night watchmen and the services of a licensed detective if needed. The difficulty of policing our seventeen buildings, covering several city blocks, most of which are open twenty-four hours a day, cannot be overstated. As in any institution, the most effective safeguard against losses is alertness and care on the part of its employees and staff.

3. Apartment Houses.

The Hospital owns forty apart-

ments at 329 and 333 Longwood Ave. In addition it now has thirty-five to forty rental rooms at the House of the Good Samaritan Nurses Home at 19 Peabody Street. The majority of the apartments are rented to members of the nursing staff at somewhat below the local rates. The rooms at 19 Peabody Street are assigned to the female house staff, staff nurses and employees.

4. Grounds and Landscaping.

Our present grounds crew numbers four and is charged with maintaining our lawns, shrubbery, removing snow, decorating for holidays and countless other tasks.

George T. Nicoll,
Director, Special Services

COMMUNICATIONS

The extensive and ever-increasing use of hospital telephones places heavy demand on our operators, our switchboard and our budget. We require twelve operators to give round-the-clock coverage of thirty-five outside lines and nearly 700 hospital telephones.

Equally important is the responsibility placed upon the operators for tracing the location of hundreds of staff and resident doctors and other key personnel. Extensive directories and call lists are maintained for this purpose but the operators' memories are the key to this service.

The cost of telephones, exclusive of salaries, for the past year was approximately \$110,000 or nearly \$329 per day.

Ruth C. O'Brien
Chief Operator

REPORTS OF ADMINISTRATIVE DEPARTMENTS

EMPLOYEE HEALTH SERVICE

The Employee Health Service was inaugurated as a new department at The Children's Hospital Medical Center in January, 1959. Following a survey of nine hospitals in the Boston area regarding policies and services for employees and subsequent administrative consultation, it was deemed wise to establish our program on a limited basis and thus determine the needs and requirements of this hospital.

Although the department has been functioning for only twenty-one months, a fairly rapid development has demonstrated the need and use of this service by employees. All hospital personnel, with the exception of student nurses and staff nurses, are currently covered by this service.

The incidence of time lost from Industrial Accidents has been substantially reduced. Minor injuries can be treated at the Employee Health Service with a minimum of time being spent away from the department. Heretofore, injured employees were referred to a clinic and the usual delay of Out-Patient care frequently involved many hours. In view of the fact that there is no historical background, it is difficult to estimate this saving in dollars and cents.

Pre-employment physical examinations, medical advice, check-ups, nursing consultations, ancillary services when indicated, polio inoculation, travel immunization, influenza vaccine and referrals to other hospitals and/or private physicians constitute the service offered. This program provides one more fringe benefit offered by The Children's Hospital Medical Center to its employees.

On July 1, 1960 The Children's Hospital Staff Association employed the professional services of Dr. Robert J. MacMillan to give medical care, physical examinations and complete immunizations. This service for the

House Staff is provided in the Employee Health area.

In March, 1960, a tentative program providing health coverage for the Judge Baker Guidance Center employees was submitted. Formal arrangements on a contractual basis have been approved.

It would be an omission not to point out two factors that are important to the service in the future.

- (1) The Employee Health Service is infringing on the Personnel Department space which is shared as a waiting area for prospective job applicants and ill employees.
- (2) The Children's Hospital Medical Center is spending a substantial amount of money for health service. As we look to the future, a co-ordinated plan for health services for all employees should be contemplated with increased medical coverage, more clearly defined policies and improved facilities. The hospital would benefit immeasurably by such a program.

A summary of statistics is attached.

Hester E. Macuen, R.N.
*Director,
Employee Health Service*

**STATISTICS FOR
EMPLOYEE HEALTH SERVICE**

| | |
|----------------------------------|-------|
| Physical examinations | 436 |
| Medical visits and check-ups | 631 |
| Nursing visits and consultations | 1,347 |
| Polio inoculations | 230 |
| Polyvalent flu vaccine | 335 |
| Other immunizations | 57 |
| Total | 3,036 |

| | |
|--------------------------------|-----|
| Average monthly visits | 253 |
| Referred for X-Rays—CHMC | 58 |
| Referred for Lab Work—CHMC | 54 |
| Referred for E.K.G.—CHMC | 9 |
| Industrial Accidents treated | 64 |
| Referred to Peter Bent Brigham | 36 |
| Referred to Mass. Eye and Ear | 8 |
| Referred to Other Hospitals | 8 |
| Referred to Private Physicians | 51 |

Safety Committee. The Medical Center's Employee Safety Committee has met monthly during the past year and carefully reviewed every on-the-job accident. There are about twelve members representing the major departments.

In addition to investigation of each accident with an eye to eliminating the cause, the committee sponsors safety publicity, maintains a safety bulletin board and makes many recommendations on working hazards.

The Workmen's Compensation self-insurance program has again meant considerable savings to the Medical Center. Costs for the calendar year 1960 should be well below 50 per cent of our normal premium. The number of accidents involving lost time continued to decline during 1960.

REPORTS OF ADMINISTRATIVE DEPARTMENTS

MAINTENANCE

This past year probably can be considered a more nearly normal year for the Maintenance Department than those immediately preceding because the basic remodeling program, started in 1956, had been substantially completed. While the activities of the department have not been as frenetic as those other years, there seems to be a level, about that of a dull roar, below which it seems The Children's Hospital Medical Center does not operate.

As far as large construction highlights are concerned, there are not many to report. The pharmacy dispensary was re-designed and moved to the location of former blood donor rooms with slight alterations. Decentralized out-patient cashier facilities and several laboratories were designed and installed. The student nurses kitchen in the Gardner House was modernized. And, of course, considerable numbers of air conditioners, sinks, counters, refrigerators and freezers, etc., were installed, all requiring power or plumbing facilities.

That the institution is constantly becoming more machine equipped throughout is apparent in the increase in the amount of electrical power used each year. The power consumption in 1959 was 15 per cent higher than in 1958. Early this year a new transformer was installed near the Main Building and considerable switching changes were made for the Carnegie and House of the Good Samaritan buildings to correct unbalanced loads created by our increasing new demands. These installations were made without incident, though many power shutdowns were involved.

Much of our activity relates to "fixing" things for other departments. In the cause of record simplification we do not keep complete cumulative records of all work performed. But October's activity may be considered

as normal to show what is done throughout the year. About 100 maintenance orders were received from the various departments to repair, fix, or adjust equipment involved in their operation. A sampling shows this variety:

Aquarium pump, toasters, scales, stethoscope, laundry truck, TV's, hot pack machines, hi-fi's, deep freeze, isolettes, go-carts, step-ladder, radios, hair dryer, tables, lamps, bottle warmer, respirators, etc.

Much more of this work was performed on a routine maintenance basis, such as sterilizer checks, isolettes cleaned or repaired, plaster traps cleaned, air filters replaced, etc. To this routine is added the phone call load, varying from day to day but estimated at several hundred a month, to perform similar jobs of urgent nature.

There are about 1,500 rooms of various kinds in our main building. Mr. Morris J. Reardon, our "light bulb man," replaced 785 light bulbs in those rooms during October and in addition traversed every corridor and stairwell in Buildings A, B, C and Bader each day checking and replacing bulbs. This represents our basic lighting maintenance program, for which we use about forty-five different sizes and types of bulbs. Along this same line we purchased in the past six months about 250 electronic tubes of great variety for use in our increasingly complex equipment, such as medical record card files, pneumatic tube controls, TV and radios, and the potwasher for the main kitchen.

We made things, too, for the other departments; in October we purchased 2,080 square feet of plywood, masonite, etc. and 500 linear feet of 1 x 12 lumber for tables, counters, shelving, etc. Our own painting department bought (and used) 409 gal-

lons of paint last year. Considerable contract painting also was performed.

During the year, amidst the repairing and building for others, roofs were fixed, sidewalks patched, snow cleared, cars parked, sinks unplugged, washers changed, fuses replaced, signs made, bearings oiled, traps cleaned, pumps repacked, rooms painted, floors repaired, pictures hung, leaves raked, lawns mowed, clocks set and keys made.

And finally we succumbed to public opinion and renovated our office. It now looks so nice that eviction notices would come as no surprise.

Arthur Stomberg
Plant Superintendent

REPORTS OF ADMINISTRATIVE DEPARTMENTS

SURGICAL APPLIANCE SHOP

In the period from June 6 to October 1, the Surgical Appliance Shop has tried to center its interests on the following problems:

1. To ascertain an accurate hourly rate, based on over-all costs, which can be applied toward a review of prices generally as well as repair work. In the area of overhead expenses, we plan to pin down the cost to the Department for vacations, holidays, coffee breaks, stationery, etc., and relate them to the over-all cost of braces in general.

2. A cost analysis of the manufacture of our braces (leg braces in particular). We have been concerning ourselves not only with the cost of machining and forging our own parts for leg braces, but also with the labor time involved in the assembling and finishing. We are also trying to determine an average time for measurements and fittings.

3. The time-clock work-cards which we now use: These cards are the means by which we obtain our labor costs for a given brace. However, the system we presently have distorts the picture for us and has delayed our presenting any final figures as to the present cost of manufacture of any particular type of brace.

4. The constant flow of repair work which comes in to this shop interrupts the production flow of new appliances, and causes, to the staff and patients, exasperating time delays in delivery. There is no question in my mind but this problem will be with us for some time, because it is related to our present brace design. As new designs are accepted by the staff, we expect to eliminate gradually the bulk of repair work. It has been my experience in the past that the one type of repair work that cannot be eliminated is the replacing of leather on various splints, since there is at present no

covering material available that will last the life of the brace itself.

5. The methods of prescribing, and more especially the prescription forms now available to the staff, are a source of annoyance to both the staff and the department for the reason that no accepted nomenclature has been worked out. At present this lack of a common terminology leads to many problems, especially remaking, because of misunderstandings; and as is so often the case, the patient is not seen by the braced man, and therefore the doctor's prescription should be precise and complete.

6. We find that in the past there have been several men doing measuring and fitting, each having his own methods. This, of itself, is not bad, provided each individual method is based on sound knowledge. The weakness of too individualistic an approach makes for unnecessary complications in production control and efficiency. When each man has his own technique, he alone is the only one who can follow through to completion on a particular brace. A series of instruction sessions are planned (tentatively one hour per week) in which we aim to combine the best fitting techniques of each individual and have the group adopt them. We also would like to include in these sessions a spelled-out method of measuring for various appliances in terms of anatomical landmarks. We feel that this will enable all of us to understand one another better, and will facilitate more flexible assignment of the work.

7. There are a number of types of braces, such as Whitman plates or any spinal brace which requires a form-fitting mold, which necessitate a negative cast taken on the patient, which in turn is used to make a positive model to which the molded sections are shaped. Presently these nega-

tive molds are taken by the physician or plaster technicians in the O.P.D. plaster room. The patient would not be seen by the braced man until many hours of labor and much material had been used on the brace, whether the brace would be in the fitting or completed stage. This practice is extremely wasteful and is very unsatisfactory to both physician and patient, since oftentimes what has been completed is inadequate and must be discarded, or remade in such a manner that materials and labor will be doubled. This problem will somewhat solve itself in the future, since we hope to cover the clinics more closely and give better service to the staff. In this way, we are on the spot when a brace is discussed and can see the problems first-hand and get whatever further details we feel will be necessary before starting the appliance. This should save a considerable amount of extensive alterations.

8. When a brace is completed, rather than have the patient come to the Appliance Shop for a final fitting, the brace is sent to the clinic, and the clinic in turn notifies the patient to come in. The brace is then applied at clinic by the physician. Consequently, little minor adjustments which mean so much to patient comfort have to be done on the spot without being planned. The doctor's time has been wasted on the obvious, examining rooms in the clinic are tied up unnecessarily, and it is my feeling that, most important of all, a good relationship between the department, physician, and the patient is seriously compromised.

The system of brace deliveries has been revised, and seems to be working quite well. Instead of our sending the brace to the Clinic for application by the physician, we now notify the Clinic when a brace is fin-

REPORTS OF ADMINISTRATIVE DEPARTMENTS

HOUSEKEEPING

ished. The patient is sent an appointment by the Clinic; he registers, and is sent to the Appliance Shop. The brace is then put on him at the Shop, and minor adjustments can be caught then and there. When the brace is satisfactorily fitted, the patient is sent to the Clinic and the Doctor gives the brace a final check. To date, with this method, we have caught many minor details in advance of the Clinic, and we believe it will save a good many people's time in the future.

Perhaps in the future it would be wise to think about combining in this area some general information for the patients or their parents which would instruct them in maintenance of the brace in terms of longer life and less repair. It is possible that the best approach to this maintenance problem would be a few simple instructions printed on a card and given to each patient at the time the brace is received. We feel that little is done along these lines in the Clinic area since no one has the time to do so.

Inventory system. In the coming year, it would be advantageous to install a perpetual inventory system, since our present set-up, oftentimes due to materials running out, causes delays in deliveries. We feel that an inventory system would prevent much of this annoyance.

We feel that the over-all approach, as outlined above, will result in substantial progress during the coming year.

John Glancy,
Manager, Surgical Appliance Shop

Maintaining cleanliness in an institution of some 17 buildings with such varied uses as exist at The Children's Hospital Medical Center is indeed a difficult task. During the past year the housekeeping department has endeavored to get this work done with a force of approximately 100 people and an expenditure of nearly \$300,000.

The most serious problem facing our department is the procurement and retention of qualified personnel. Our turnover rate exceeded 100 per cent during the past year, making it extremely hard to provide good service. The primary causes for this rapid turnover appear to be a low wage scale, barely above unemployment compensation in some cases, inadequate employee facilities such as locker rooms and employee lounges, and the lack of an organized incentive program in which the employee can improve his standing. All these problems are getting active attention and within budgetary limits a real effort is being made to improve these conditions.

The varied uses of the 17 buildings—a sampling of which includes patient rooms, operating rooms, public corridors, doctors' offices, animal rooms, dormitory rooms, and dental offices — make cleaning a complex problem. Emphasis must, of course, always be placed on the patient and clinical areas. The importance of cleanliness in hospitals is obvious. The role of the cleaning man must be recognized and every effort made to dignify his or her job both socially and financially. Only by doing this will we maintain the high standards required.

Frank W. Dickey
Executive Housekeeper

PRINT SHOP

In 1956 the Medical Center expanded its duplicating room from a simple electric mimeograph with one operator into a more up-to-date printing shop with an offset duplicator. Since that time the shop has added two persons to its work force, and to its equipment it has added a folding machine, punch press, graph duplicator, light table, paper cutter, collator, photo copy vacuum exposure frame and electric stapler.

During the four years of operation the volume of work has risen sharply. The shop now does, in addition to all of the duplicating, a large portion of the Medical Center's printing. Work from affiliating institutions and neighboring hospitals has been accepted to maintain a uniform work load. The dollar volume of this outside work amounts to \$10,000-12,000 per year.

Although the operation of our own shop has effected some savings, its most important contribution has been its on-the-spot service during a time of great change and growth throughout the Center. The greatest need in this area now is a better working space. The entire operation is crowded into one small, poorly ventilated basement room.

The Hospital post office is located near the print shop, employs two persons, and is under the same supervision as the print shop.

Salvatore Caliguri
Supervisor, Print Shop

REPORT OF WOMEN'S COMMITTEE

REPORT OF WOMEN'S COMMITTEE

The Women's Committee of The Children's Hospital Medical Center has had a busy year. Following the decision of the Board of Trustees of The Children's Hospital to merge the various units of The Children's Medical Center into The Children's Hospital Medical Center, at our December 1959 meeting we voted to change our name to the Women's Committee of The Children's Hospital Medical Center. We invited the entire Staff Wives group to join the Women's Committee as a standing committee and as individual members. This entailed an amendment to our by-laws. Before this new amendment was passed, the number of Active Members had been fixed at 125. The chairman of the Staff Wives Committee, Mrs. Randolph K. Byers, is a member of our Executive Committee.

Two new committees were formed this year, the Volunteer Service Committee and the Decorating Committee. The Volunteer Service Committee, with Mrs. Weston W. Adams as chairman, was organized in April with representatives of the doctors, Nursing and Administrative Departments, the director of Volunteer Service, a member of the Staff Wives group and chairman of the Women's Committee as members. Its functions are to advise on Volunteer Service and to plan the annual Volunteer Party. This year's party took place on May 19 at Gardner House. Dr. Alexander S. Nadas of the Cardiology Division was the speaker. Volunteer pins were awarded. About 175 attended.

The new Decorating Committee consists of three members of the Women's Committee, one of them on the Executive Board. Mrs. Kirke A. Neal is the chairman, assisted by Mrs. Frederick R. Weed and Mrs. Joseph T. Ryerson, Jr. This year the Hunnewell Admitting Entrance was decorated and

additions were made to the Doctors' Lounge. A new project has been the hanging of paintings in appropriate areas of the hospital. These paintings, loaned by the Art Wagon of the Institute of Contemporary Art, are hanging in the lobby of the Good Samaritan building and in the Orthopedic Out-Patient Waiting Room.

Many special events kept us busy during the year. On February 9 the Women's Committee gave a birthday party to commemorate the 18th year of the Surgical Dressings group. On March 8 the Volunteers and Friends meeting took place at the Jimmy Fund Building with Dr. Robert J. Haggerty as the speaker, assisted by Miss Dorothy Pratt. On July 14 the Stagemobile of the Children's Theatre group presented the play *The Jesters* at the Jimmy Fund Building, financed by the Women's Committee.

Our Committee contributed in various ways to the social activities of the Hospital Staff. It was our pleasure to provide many special teas. One, requested by Dr. Lendon Snedeker, on October 15th, entertained the Child Study Association of America. Another Tea, on April 11, honored Dr. Charles A. Janeway's guest, Dr. Vernon Collins of Australia. In September we gave a Tea on the Prouty Terrace for the Study Group of the International Federation of Hospitals. We also cooperated in giving a luncheon for the wives of this group at the Massachusetts Institute of Technology Faculty Club and taking them on a tour of Concord. We cooperated with Mrs. Kathleen Higgins, Director of Volunteer Service, in entertaining the Council of Directors of Volunteers of Greater Boston Hospitals, on September 20th. These Special Teas were in addition to our regular monthly Nurses' Teas at Gardner House and the weekly Coffees for parents and

REPORT OF WOMEN'S COMMITTEE

foreign visitors, held in the Conference Dining Room. In July we assisted at the picnic held at Rivers Country Day School for all the house staff and their wives and children and in September at the third annual picnic held for the hospital employees.

In addition to our activities within the hospital we attended the meetings of the American Hospital Association and the Massachusetts Hospital Association. In January Mrs. Byers and I represented the Women's Committee at the Greater Boston Regional Group of Hospital Auxiliaries, at Women's Free Hospital. Monday, March 28, was Auxiliary Day at the New England Hospital Assembly, which Mrs. Robert H. Hopkins, Mrs. David Wilder, Mrs. Weston W. Adams and I attended. In May the Massachusetts Hospital Association had a meeting to which Mrs. David Wilder, Mrs. Joseph P. Greer and I went. In August we were represented in San Francisco at the 62nd annual meeting of the American Hospital Association by Mrs. Joseph P. Greer and Mrs. Arthur H. Nelson.

Our monthly meetings have heard a variety of speaker who have given their time to keep us up to date on hospital activities. In October Mr. Joseph P. Greer outlined suggestions for our contributions to the Hospital. In December Dr. Franc D. Ingraham gave us a fascinating talk with slides and this was followed by a tour of the Neurosurgical Research Laboratory, with Dr. Edgar A. Bering, Jr., as guide. Dr. Louis K. Diamond spoke to us on "Blood Groupings" in January, and we toured the new Blood Bank, guided by its director, Dr. A. Richardson Jones. In February Dr. Adam Sortini spoke on "Hearing Problems of Children and Adults." Our Program Meeting, arranged by the chairmen of our various committees, was held in March.

In April Dr. Robert E. Gross gave us a demonstration of his work, assisted by Dr. David L. Collins and the head anesthetist, Miss Betty E. Lank. It was my pleasure to have the May Picnic Meeting at my house, and Mr. Joseph P. Greer spoke to us there on present and future plans of the hospital.

On the financial side, our donation to the hospital totals \$32,908. Outside community activities, the Dafodil Club, the Cohasset Music Festival and the Cataumet Hospital Week, brought in \$6,124 of this amount. Our own committees, the Lunch Shop, the Gift Shop, the Thrift Shop and the Yankee Bookstall accounted for \$22,804, a sum to be proud of. With the addition of dues, donations, Remembrance Fund and library contributions, we have been able to give \$5,581 to the Hospital Building Fund, \$324 to the Social Service Department, \$3,700 to the Education and Recreation Department, \$100 to the Whittington Memorial Fund and \$15,000 for requests from Department Heads.

Besides these specific gifts we carry on our annual obligations, such as salaries, magazine subscriptions, Christmas gifts to Hospital Employees, Hospital Association dues and travel expenses as well as donations of flowers and plants throughout the hospital.

REPORTS OF THE SUB-COMMITTEES

Christmas Window Painting—Chairman, Mrs. George H. Sweetnam. Mrs. Sweetnam and her Committee of ten painters continue enthusiastically painting Santas, Rudolfs, etc., all over the hospital. They get some of their ideas directly from the children themselves.

Gift Shop—Chairman, Mrs. H. Raymond Wilkinson. The Gift Shop had a wonderful year. A luncheon meeting was held at the hospital in November

for the Gift Shop Chairmen of the Massachusetts Hospital Association. Mrs. Wilkinson was Chairman of the event, assisted by the Gift Shop Volunteers.

Girl Scouts—Chairman, Mrs. George A. Clapp. The Girl Scouts turn in scrapbooks, magazines and toys, which are much enjoyed by the patients.

Holiday Committee—Chairman, Mrs. Stephen Little. Favors were provided for nine holidays during the year. The favors were made by Needham and Wellesley Girl Scouts and the Boston and Weston Junior Red Cross.

Hospitality Committee — Chairman, Mrs. Sidney H. Wirt. At the weekly Coffees on Wednesday afternoons in the Conference Dining Room, parents from twenty-two states and eleven foreign countries were entertained. The Lunch Shop provides the food.

Knitting Committee—Chairman, Mrs. Francis A. Harding. A grand total of 118 articles were knitted for the children by twenty-one faithful knitters, plus three Church Groups. A new group from Mattapan, called "Chums of Children," has been added. Still more recruits are needed for the coming year.

Library Committee—Chairman, Mrs. Kenneth W. Warren. Over 3,000 books were circulated from the Patients' Library on the seventh floor of Children's Hospital and over 1,500 more books from the library of the House of the Good Samaritan. A total of twenty volunteers staff the libraries and the bookcart. In addition to hospital work, this Committee sent boxes of used books to the Ranfurly Out-Island Library in the Bahamas and also to the Island of Ramea off Newfoundland. This year 241 new volumes were added to the fine collection of books, both foreign and domestic.

REPORT OF WOMEN'S COMMITTEE

Membership—Chairman, Mrs. Robert H. Hopkins. Mrs. Hopkins reported that we have eighty-one new members this year, including thirty-five active members, twenty-seven sustaining and contributing members and nineteen associate members. We regret the loss of four members, one deceased and three resigned.

Lunch Shop—Chairman, Mrs. Samuel S. Stevens. The Lunch Shop continues to give excellent service to everyone in the hospital. A special feature is the policy of extra low prices for children. The Lunch Shop Volunteers gave over 7,800 hours of work and the sum of \$8,000 to the hospital.

Nurses' Teas — Co-Chairmen, Mrs. O. B. B. Rapalyea and Mrs. Richard U. Wakeman. Eight teas were held for the nurses in Gardner House. The Christmas Tea, which included doctors as well as other hospital groups, was one of the largest we have ever had.

Photography—Chairman, Mrs. Albert H. Hittel. This project continues to give pleasure to parents in many parts of the world who receive pictures of their children taken with our Polaroid Camera.

Surgical Dressings—Chairman, Mrs. Joel M. Barnes. This group has given 800 hours in the hospital and more hours at home. Four Church Groups have helped, and a remarkable total of over 162,000 dressings have been made for the hospital.

Thrift Shop—Chairman, Mrs. David Wilder. Receipts increased slightly to \$3,834 but so did the expenses; therefore the net profit was slightly lower than last year, \$2,187. More donations are needed and a bundle should be brought to each meeting.

Staff Wives Committee — Chairman, Mrs. Randolph K. Byers. This com-

mittee, organized in 1952, operated independently until January, 1960, when it joined the Women's Committee as a standing committee and its members joined individually. Their activities included a tea at Mrs. John Enders' house for new house staff in January, two morning parties at the house of Mrs. Harry Shwachman in July and a fall dance in November.

Volunteer Service Committee—Chairman, Mrs. Weston W. Adams. This newest standing committee of the Women's Committee was organized last spring to act as a liaison between the professional services of the staff of the hospital and its volunteers. It hopes to be of assistance in solving problems of placement and in recruiting volunteers. The committee organized and helped to run the Volunteer Party in May.

Yankee Bookstall — Chairman, Mrs. Alfred Thomas. The proceeds of the sale of \$5,581 were given to the Hospital Building Fund. Massachusetts Horticultural Hall has proved to be a convenient place for the sale, and it will be held there this April 6 through April 11.

REPORTS FROM OTHER UNITS

Children's Mission to Children—Mrs. Alexander S. Nadas. A new project of this unit is consultation service to the Child Health Unit of Children's Hospital in addition to its regular activities of foster home placement and the parent guidance.

House of The Good Samaritan—Miss Margaret A. Revere. On January 1, 1961, the House of the Good Samaritan celebrated its 100th anniversary. This unit now houses the Respirator Unit, the Heart Clinic and the Rheumatic Fever cases and convalescent children. The photocardigraph ma-

chine donated by the Women's Committee this year will be very useful.

Infants' Hospital—Mrs. Charles F. Hovey. Miss Gladys Beardwood, head nurse of the Infants' Hospital, and Mrs. Carolyn Overfors, head nurse of the Premature Nursery, reported the hospital has been filled to capacity. The Women's Committee magazines are enjoyed in the waiting rooms, and the Baby Tendas are much appreciated.

These many activities could not be carried on without the help of all our members, most especially the hard-working chairmen of the various committees and the efficient members of the Executive Committee. To all I want to express my heartfelt gratitude for the support and cooperation they have given me during my three years in office. It has been stimulating, interesting to work with them all. My very special thanks go to Miss Dorothy Rutherford, who has been a bulwark of strength. It has been a great privilege and a wonderful experience to serve you as Chairman and through the committee to serve this truly great Children's Hospital Medical Center.

Mrs. Charles F. Hovey
Chairman, Women's Committee

REPORT OF WOMEN'S COMMITTEE

FINANCE COMMITTEE REPORT

At the Annual Meeting of the Women's Committee on November 15, the Finance Committee presented the following recommendations for funds to be voted:

| | |
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| Proceeds (Yankee Bookstall) to Building Fund of the Hospital | \$5,581.29 |
|---|------------|

| | | |
|-------------------------------|----------|----------|
| Women's Committee Obligations | | |
| Recreation Services | 600.00 | |
| Teas and Entertainment | 1,500.00 | |
| Knitting Committee | 100.00 | |
| Library Committee | 250.00 | |
| Holiday Committee | 100.00 | |
| Flower Fund | 200.00 | |
| Discretionary Fund | 150.00 | 2,900.00 |

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|---|--------|
| Received from Remembrance Fund (Paid to Hospital Social Service) | 324.00 |
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Items for Contribution

| | | |
|---|----------|-------------|
| Hi-Fidelity Record Player | 75.00 | |
| Prisma Glasses | 100.00 | |
| Baby Tendas | 50.00 | |
| Recreation—Towards Salaries & Play Equipment | 5,500.00 | |
| Kitchenette & Small Lounge—19 Peabody Street | 1,500.00 | |
| Funds for Tickets—Student Nurses (\$250) | 700.00 | |
| House Staff (\$450) | | |
| Tape Recorder for X-Ray Therapy Area | 250.00 | |
| Television Sets—Purchasing New & Replacing | 3,000.00 | |
| Scholarship Fund—Nurses | 1,500.00 | |
| Conference Dining Room—Cupboards, Sink & Hotplate | 1,000.00 | |
| Staff Wives Committee—Fall Dance | 500.00 | |
| Hospital Picnics—House Staff & Employees | 500.00 | |
| Flower Fund—Additional for 1961 | 100.00 | |
| Discretionary Fund—Additional for 1961 | 100.00 | |
| Hospital Bowling League | 125.00 | 15,000.00 |
| Total | | \$23,805.29 |

Mrs. George P. Buell, *Chairman*
Mrs. Stewart H. Clifford
Mrs. Roger A. Perry

REPORT OF WOMEN'S COMMITTEE

ACTIVE MEMBERS

Adams, Mrs. Weston W.
Alden, Mrs. John M.
Allen, Mrs. W. Lloyd
Almy, Mrs. Robert B.
Almy, Mrs. Robert B.
Anthony, Mrs. Carroll G.

Bainbridge, Mrs. Robert P.
Barnes, Mrs. Joel M.
Bartlett, Mrs. Charles W.
Batchelder, Mrs. Charles F.
Bering, Mrs. Edgar A., Jr.
Bigelow, Mrs. Edward L., Jr.
Brewer, Mrs. Cyrus
Brickley, Mrs. Philip E.
Buell, Mrs. George P.
Bursk, Mrs. Edward C.
Burwell, Mrs. C. Sidney
Byers, Mrs. Randolph K.
Berenberg, Mrs. William

Carney, Miss Dorothy M.
Clapp, Mrs. Eugene H., II
Clifford, Mrs. Stewart H.
Coburn, Miss Louise
Crandell, Mrs. John C., Jr.
Crigler, Mrs. John F., Jr.
Crockett, Mrs. Charles B.

Dale, Mrs. John
Damon, Mrs. Lawrence B.
Diamond, Mrs. Louis K.
Drorbaugh, Mrs. James E.
Drury, Mrs. Samuel S.
Dyer, Mrs. Edwin C.

Elliott, Mrs. Byron K.
Emerson, Mrs. Edward L.
Emery, Mrs. Forrest S.
Erickson, Mrs. Joseph A.

Ferguson, Mrs. Charles F.
Flood, Mrs. Richard T.
Floyd, Mrs. Richard C.
Foster, Mrs. Reginald, Jr.
French, Mrs. Stanley G.

Gerrity, Mrs. Frank
Gettings, Mrs. James H.
Gibby, Mrs. Harry
Gillette, Mrs. Howard F.
Good, Mrs. Arthur J.
Greer, Mrs. Joseph P.

Haffenreffer, Mrs. Theodore
Haggerty, Mrs. Robert J.
Hansel, Mrs. Lawrence H.
Harding, Mrs. Donald F.
Harding, Mrs. Francis A.
Harwood, Mrs. Bartlett, Jr.

Hebbard, Mrs. William E.
Hendren, Mrs. W. Hardy.
Hopkins, Mrs. Robert H.
Hornblower, Mrs. Henry, II.
Hovey, Mrs. Charles F.
Hunnewell, Mrs. Walter, Jr.
Hurlbut, Mrs. Cornelius, Jr.

Johnson, Mrs. John H.
Johnson, Mrs. Laurence H. H.

Karp, Mrs. Meier
Kennard, Mrs. Robert M. P.
Kieran, Mrs. John
Kiley, Mrs. John C., Jr.
Knight, Mrs. Richard C.
Knowles, Mrs. John H.
Kroto, Mrs. Hans,

Lanman, Mrs. Thomas H.
Latham, Mrs. Earle O.
Leland, Miss Elizabeth C.
Levin, Mrs. Benjamin
Liebman, Mrs. Sumner
Little, Mrs. Stephen
Lombroso, Mrs. Cesare T.
Lowe, Mrs. Samuel L., Jr.
Lyman, Mrs. Ronald T., Jr.

Mercer, Mrs. Douglas, Jr.
Mitchell, Mrs. Emlyn V.
Munro, Mrs. Edward S.
Murphy, Mrs. Edward L.
Mueller, Mrs. Harry L.

Nadas, Mrs. Alexander S.
Nelson, Mrs. Arthur H.
Nordbeck, Mrs. Theodore E.

Ober, Mrs. Frederick C.

Paige, Mrs. Francis A.
Paine, Mrs. Richmond S.
Painter, Mrs. Whitfield
Palmer, Mrs. Henry W.
Parker, Mrs. James F.
Parsons, Mrs. Ernst
Perry, Mrs. Roger A.
Petremont, Mrs. Dorothy P.
Pettit, Mrs. Charles H.
Pfeffer, Mrs. William
Pollock, Mrs. Robert J.
Pratt, Mrs. Albert
Potter, Mrs. Cary

Rapalyea, Mrs. Oldfield B. B.
Revere, Miss Margaret A.
Riley, Mrs. Russell F.
Robb, Mrs. Walter E., Jr.
Rogers, Miss Dorothy.
Russell, Mrs. Otis T.

Ryerson, Mrs. Joseph T., Jr.

Sawyer, Mrs. Henry B.
Scott, Mrs. J. Gordon.
Sears, Mrs. Richard D.
Smith, Mrs. Everett W.
Smith, Mrs. Robert M.
Steele, Mrs. Keith C.
Stevens, Mrs. Samuel S.
Stewart, Mrs. Frank H.
Summers, Mrs. Merle G.
Sutton, Mrs. Gardner
Sweetnam, Mrs. George H.
Sylvester, Mrs. Albert I.

Tappan, Mrs. Robert A.
Thayer, Mrs. Sherman R.
Thomas, Mrs. Alfred
Thompson, Mrs. George E.

Wakeman, Mrs. Richard V.
Walker, Mrs. Rufus F.
Wallace, Mrs. Jacob
Walworth, Mrs. Gardner C.
Warren, Mrs. Kenneth W.
Weed, Mrs. Frederick R.
Welch, Mrs. Hillard W.
Wellington, Mrs. Stephen B.
Wetherald, Miss Dorothy P.
Whittemore, Mrs. Robert M.
Wilder, Mrs. David
Wilkinson, Mrs. H. Raymond
Williams, Mrs. Barrett
Williams, Mrs. Willis E.
Wilson, Mrs. Samuel T.
Winter, Mrs. William D., Jr.
Wirt, Mrs. Sidney H.
Wolcott, Mrs. Samuel H.

